

Service Manual



Service Manual

C3400



Model : C3400



Table Of Contents

1. INTRODUCTION	2	5. DISASSEMBLY INSTRUCTION ...	88
1.1 Purpose	2	5.1 Disassembly	88
1.2 Regulatory Information	2	5.2 Calibration	95
1.3 Abbreviations	4	6. BLOCK DIAGRAM	98
2. PERFORMANCE	6	7. CIRCUIT DIAGRAM	99
2.1 H/W Features	6	8. PCB LAYOUT	106
2.2 Technical Specification	7	9. ENGINEERING MODE.....	109
3. TECHNICAL BRIEF	11	9.1 BB Test [MENU 1]	110
3.1 Transceiver (SI4205-BM, U502)	11	9.2 RF Test [MENU 2]	111
3.2 Power Amplifier Module (SKY77325, U501)	16	9.3 MF mode [MENU 3].....	111
3.3 26 MHz Clock (VCTCXO, X500)	17	9.4 Trace option [MENU 4].....	112
3.4 Power Supplies for RF Circuits (RF LDO, U503)	17	9.5 Call timer [MENU 5]	112
3.5 Digital Main Processor (AD6527B, U101)	18	9.6 Fact. Reset [MENU 6]	112
3.6 Analog Main & Power Management Processor (AD6535, U102)	24	9.7 S/W version [MENU 7]	112
3.7 Memory (RD38F3350LLZDQ0, U302) ..	34	10. STAND ALONE TEST.....	113
3.8 Display and Interface.....	35	10.1 Introduction	113
3.9 Camera Interface.....	37	10.2 Setting Method	113
3.10 Keypad Switches and Scanning.....	39	10.3 Means of Test	114
3.11 Microphone	40	11. AUTO CALIBRATION	116
3.12 Main Speaker	40	11.1 Overview	118
3.13 Headset Interface	41	11.2 Requirements	116
3.14 MP3/AAC Decoder(uPD9993, U702) & Amplifier(LM4923, U703)	42	11.3 Menu and Settings	116
3.15 Key Back-light Illumination	44	11.4 AGC	118
3.16 LCD Back-light Illumination	45	11.5 APC	118
3.17 VIBRATOR	46	11.6 ADC	118
4. TROUBLE SHOOTING	47	11.7 Setting	118
4.1 RX Trouble	47	11.8 How to do calibration	118
4.2 TX Trouble.....	55	12. EXPLODED VIEW & REPLACEMENT PART LIST	119
4.3 Power On Trouble	63	12.1 Exploded View	119
4.4 Charging Trouble.....	65	12.2 Replacement Parts	
4.5 Vibrator Trouble.....	67	< Mechanic component >.....	121
4.6 LCD Trouble.....	69	< Main component >	123
4.7 Camera Trouble	71	12.3 Accessory.....	130
4.8 Speaker Trouble	73		
4.9 SIM Card Interface Trouble	75		
4.10 Earphone Trouble	77		
4.11 KEY backlight Trouble.....	79		
4.12 Receiver Trouble	81		
4.13 Microphone Trouble	83		
4.14 RTC Trouble.....	85		
4.15 Indication LED Trouble.....	86		
4.16 Folder on/off Trouble.....	87		

1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of this model.

1.2 Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system. There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common-carrier telecommunication service of facilities accessed through or connected to it.

The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the this phone or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

D. Maintenance Limitations

Maintenance limitations on this model must be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs expect as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

F. Pictures

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

Phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated by the  sign. Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

1. INTRODUCTION

1.3 Abbreviations

For the purposes of this manual, following abbreviations apply:

APC	Automatic Power Control
BB	Baseband
BER	Bit Error Ratio
CC-CV	Constant Current – Constant Voltage
DAC	Digital to Analog Converter
DCS	Digital Communication System
dBm	dB relative to 1 milli watt
DSP	Digital Signal Processing
EEPROM	Electrical Erasable Programmable Read-Only Memory
ESD	Electrostatic Discharge
FPCB	Flexible Printed Circuit Board
GMSK	Gaussian Minimum Shift Keying
GPIO	General Purpose Interface Bus
GSM	Global System for Mobile Communications
IPIU	International Portable User Identity
IF	Intermediate Frequency
LCD	Liquid Crystal Display
LDO	Low Drop Output
LED	Light Emitting Diode
OPLL	Offset Phase Locked Loop
PAM	Power Amplifier Module
PCB	Printed Circuit Board
PGA	Programmable Gain Amplifier
PLL	Phase Locked Loop
PSTN	Public Switched Telephone Network
RF	Radio Frequency
RLR	Receiving Loudness Rating
RMS	Root Mean Square
RTC	Real Time Clock

SAW	Surface Acoustic Wave
SIM	Subscriber Identity Module
SLR	Sending Loudness Rating
SRAM	Static Random Access Memory
PSRAM	Pseudo SRAM
STMR	Side Tone Masking Rating
TA	Travel Adapter
TDD	Time Division Duplex
TDMA	Time Division Multiple Access
UART	Universal Asynchronous Receiver/Transmitter
VCO	Voltage Controlled Oscillator
VCTCXO	Voltage Control Temperature Compensated Crystal Oscillator
WAP	Wireless Application Protocol

2. PERFORMANCE

2.1 H/W Features

Item	Feature	Comment
Standard Battery	Li-ion, 1000mAh Battery Size : 34.15 (W) °ø53.55(H) °ø5.7(T) [mm] Battery Weight : 25g	
Stand by Current	Under the minimum current consumption environment (such as paging period 9), the level of standby current is below 4mA.	
Talk time	Up to 3 hours (GSM TX Level 5)	
Stand by time	Up to 200 hours (Paging Period: 9, RSSI: -85 dBm)	
Charging time	Approx. Under 3.75 hours	
RX Sensitivity	GSM, EGSM: -107dBm, DCS: -107dBm	
TX output power	GSM, EGSM: 33dBm(Level 5), DCS: 30dBm(Level 0)	
GPRS compatibility	Class 10	
SIM card type	3V Only	
Display	Main LCD : CSTN 128 °ø 160 pixel 65K Color Sub LCD : STN 96 °ø 64 pixel MONO Color	
Status Indicator	Hard icons. Key Pad 0 ~ 9, #, *, Up/Down Navigation Key Menu Key, Clear Key, Send Key, END/PWR Key Soft Key(Left/Right)	
ANT	Internal	
EAR Phone Jack	Yes (stereo)	
PC Synchronization	Yes	
Speech coding	EFR/FR/HR	
Data and Fax	Yes	
Vibrator	Yes	
Loud Speaker	Yes	
Voice Recording	Yes	
Microphone	Yes	
Speaker/Receiver	One way dual speaker	
Travel Adapter	Yes	
MIDI	40 Poly	
MP3/AAC	Yes	
Options	Data Kit , CD	

2.2 Technical Specification

Item	Description	Specification					
1	Frequency Band	GSM TX: $890 + n \times 0.2 \text{ MHz}$ RX: $935 + n \times 0.2 \text{ MHz}$ ($n=1\sim124$) EGSM TX: $890 + (n-1024) \times 0.2 \text{ MHz}$ RX: $935 + (n-1024) \times 0.2 \text{ MHz}$ ($n=975\sim1024$) DCS TX: $1710 + (n-512) \times 0.2 \text{ MHz}$ RX: $1805 + (n-512) \times 0.2 \text{ MHz}$ ($n=512\sim885$)					
2	Phase Error	RMS < 5 degrees Peak < 20 degrees					
3	Frequency Error	< 0.1 ppm					
4	Power Level	GSM, EGSM					
		Level	Power	Toler.	Level	Power	Toler.
		5	33 dBm	$\pm 2\text{dB}$	13	17 dBm	$\pm 3\text{dB}$
		6	31 dBm	$\pm 3\text{dB}$	14	15 dBm	$\pm 3\text{dB}$
		7	29 dBm	$\pm 3\text{dB}$	15	13 dBm	$\pm 3\text{dB}$
		8	27 dBm	$\pm 3\text{dB}$	16	11 dBm	$\pm 5\text{dB}$
		9	25 dBm	$\pm 3\text{dB}$	17	9 dBm	$\pm 5\text{dB}$
		10	23 dBm	$\pm 3\text{dB}$	18	7 dBm	$\pm 5\text{dB}$
		11	21 dBm	$\pm 3\text{dB}$	19	5 dBm	$\pm 5\text{dB}$
		12	19 dBm	$\pm 3\text{dB}$			
		DCS					
		Level	Power	Toler.	Level	Power	Toler.
		0	30 dBm	$\pm 2\text{dB}$	8	14 dBm	$\pm 3\text{dB}$
		1	28 dBm	$\pm 3\text{dB}$	9	12 dBm	$\pm 4\text{dB}$
		2	26 dBm	$\pm 3\text{dB}$	10	10 dBm	$\pm 4\text{dB}$
		3	24 dBm	$\pm 3\text{dB}$	11	8 dBm	$\pm 4\text{dB}$
		4	22 dBm	$\pm 3\text{dB}$	12	6 dBm	$\pm 4\text{dB}$
		5	20 dBm	$\pm 3\text{dB}$	13	4 dBm	$\pm 4\text{dB}$
		6	18 dBm	$\pm 3\text{dB}$	14	2 dBm	$\pm 5\text{dB}$
		7	16 dBm	$\pm 3\text{dB}$	15	0 dBm	$\pm 5\text{dB}$

2. PERFORMANCE

Item	Description	Specification	
5	Output RF Spectrum (due to modulation)	GSM, EGSM	
		Offset from Carrier (kHz).	Max. dBc
		100	+0.5
		200	-30
		250	-33
		400	-60
		600~ <1,200	-60
		1,200~ <1,800	-60
		1,800~ <3,000	-63
		3,000~ <6,000	-65
		6,000	-71
		DCS	
		Offset from Carrier (kHz).	Max. dBc
		100	+0.5
		200	-30
		250	-33
		400	-60
		600~ <1,200	-60
		1,200~ <1,800	-60
		1,800~ <3,000	-65
		3,000~ <6,000	-65
		6,000	-73
6	Output RF Spectrum (due to switching transient)	GSM, EGSM	
		Offset from Carrier (kHz).	Max. dBm
		400	-19
		600	-21
		1,200	-21
		1,800	-24
		DCS	
		Offset from Carrier (kHz).	Max. dBm
		400	-22
		600	-24
		1,200	-24
		1,800	-27
7	Spurious Emissions	Conduction,Emission Status	

Item	Description	Specification		
8	Bit Error Rate	GSM, EGSM BER (Class II) < 2.439% @−102 dBm DCS BER (Class II) < 2.439% @−100 dBm		
9	RX Level Report Accuracy	±3 dB		
10	SLR	8±3 dB		
11	Sending Response	Frequency (Hz)	Max.(dB)	Min.(dB)
		100	−12	−
		200	0	−
		300	0	−12
		1,000	0	−6
		2,000	4	−6
		3,000	4	−6
		3,400	4	−9
		4,000	0	−
12	RLR	2±3 dB		
13	Receiving Response	Frequency (Hz)	Max. (dB)	Min. (dB)
		100	−12	−
		200	0	−
		300	2	−7
		500	✱	−5
		1,000	0	−5
		3,000	2	−5
		3,400	2	−10
		4,000	2	
		* Mean that Adopt a straight line in between 300 Hz and 1,000 Hz to be Max. level in the range.		
14	STMR	13±5 dB		
15	Stability Margin	> 6 dB		
16	Distortion	dB to ARL (dB)		Level Ratio (dB)
		−35		17.5
		−30		22.5
		−20		30.7
		−10		33.3
		0		33.7
		7		31.7
		10		25.5
17	Side tone Distortion	Three stage distortion < 10%		
18	System frequency (13 MHz) tolerance	≤ 2.5 ppm		
19	32.768KHz tolerance	≤ 30 ppm		

2. PERFORMANCE

Item	Description	Specification	
20	Ringer Volume	At least 80 dB under below conditions: 1. Ringer set as ringer. 2. Test distance set as 50 cm.	
21	Charge Current	Fast Charge : < 430 mA Slow Charge : < 160 mA	
22	Antenna Display	Antenna Bar Number	Power
		5	-85 dBm ~
		4	-90 dBm ~ -86 dBm
		3	-95 dBm ~ -91 dBm
		2	-100 dBm ~ -96 dBm
		1	-105 dBm ~ -101 dBm
		0	~ -105 dBm
23	Battery Indicator	Battery Bar Number	Voltage
		0	3.51 ~ 3.61V
		1	3.62 ~ 3.69V
		2	3.70 ~ 3.77V
		3	3.78 ~ 3.91V
		4	3.92 V ~
24	Low Voltage Warning	3.62 ± 0.03V (Call)	
		3.50 ± 0.03V (Standby)	
25	Forced shut down Voltage	3.35 ± 0.03V	
26	Battery Type	1 Li-ion Battery Standard Voltage = 3.7V Battery full charge voltage = 4.2V Capacity: 1000mAh	
27	Travel Charger	Switching-mode charger Input : 100 ~ 240V, 50/60 Hz Output: 5.2 V, 800 mA	

3. TECHNICAL BRIEF

3.1 Transceiver (SI4205-BM, U502)

The RF parts consist of a transmitter part, a receiver part, a frequency synthesizer part, a voltage supply part, and a VCTCXO part.

The Aero I transceiver is the integrated RF front end for multi-band GSM/GPRS digital cellular handsets and wireless data modems. The integrated solution eliminates the IF SAW filter, external low noise amplifier (LNAs) for three bands, transmit and RF voltage controlled oscillator (VCO modules, and other discrete components found in conventional designs.

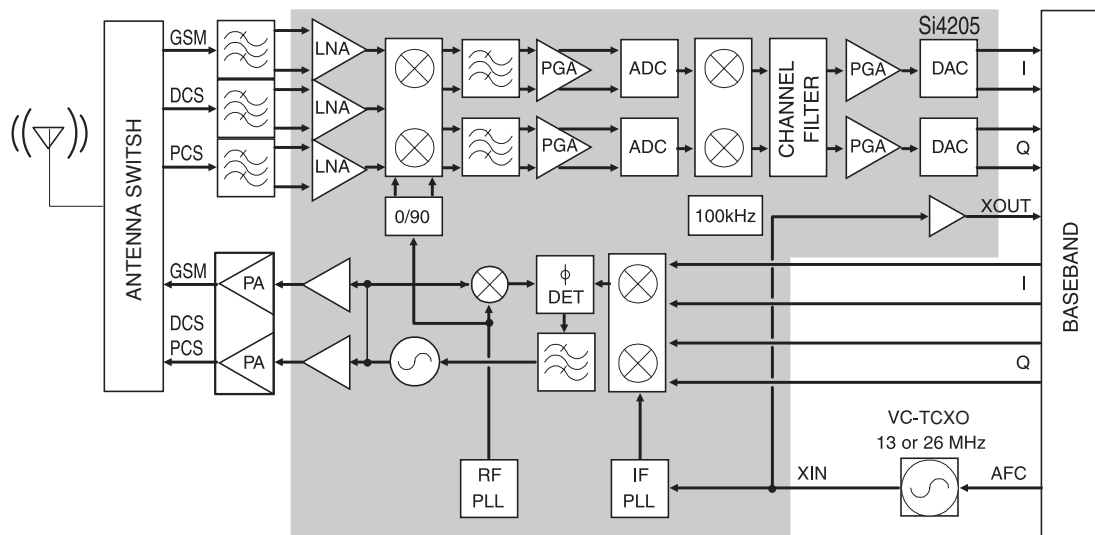


Figure. 3-1 RECEIVER FUNCTIONAL BLOCK DIAGRAM

3. TECHNICAL BRIEF

(1) Receiver Part

The Aero I transceiver uses a low-IF receiver architecture which allows for the on chip integration of the channel selection filters, eliminating the external RF image reject filters and the IF SAW filter required in conventional super-heterodyne architectures.

A. RF front end

RF front end consists of Antenna Switch(FL500), two SAW Filters(FL401, FL402) and dual band LNAs integrated in transceiver (U502).

The Received RF signals(GSM 925MHz ~ 960MHz, DCS 1805MHz ~ 1880MHz) are fed into the antenna or Mobile switch.

The Antenna Switch(FL500) is used to control the Rx and Tx paths. And, the input signals VC1 and VC2 of a FL500 are directly connected to baseband controller to switch either Tx or Rx path on.

The logic and current is given below Table 3-1.

Table 3-1 THE LOGIC AND CURRENT

Three differential-input LNAs are integrated in SI4205. The GSM input supports the GSM 850

	VC1	VC2	Current
DCS TX	0V	2.5 ~ 3.0V	10.0 mA max
GSM TX	2.5 ~ 3.0V	0V	10.0 mA max
GSM/DCS RX	0V	0V	< 0.1 mA

(824-849 MHz) or E-GSM 900 (925-960MHz) bands. The DCS input supports the DCS 1800 (1805-1880 MHz) band. The PCS input supports the PCS 1900 (1930-1990 MHz) band.

The LNA inputs are matched to the 150Ω balanced output SAW filters through external LC matching networks. The LNA gain is controlled with the LNAG[1:0] and LNAC[1:0] bits in register 05h (Figure 3-2).

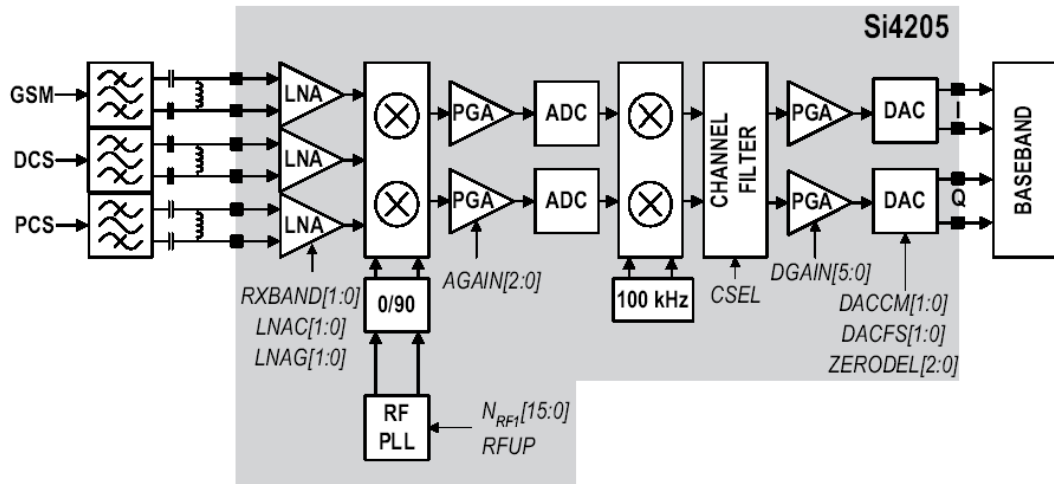


Figure. 3-2 SI4205 RECEIVER PART

B. Intermediate frequency (IF) and Demodulation

A quadrature image-reject mixer downconverts the RF signal to a 100KHz intermediate frequency (IF) with the RFLO from the frequency synthesizer. The RFLO frequency is between 1737.8 to 1989.9 MHz, and is internally divided by 2 for GSM 850 and E-GSM 900 modes. The mixer output is amplified with an analog programmable gain amplifier (PGA), which is controlled with the AGAIN[2:0] bits in register 05h (Figure3-2). The quadrature IF signal is digitized with high resolution A/D converters (ADCs).

The ADC output is downconverted to baseband with a digital 100KHz quadrature LO signal. Digital decimation and IIR filters perform channel selection to remove blocking and reference interference signals. The selectivity setting (CSEL=0) or a low selectivity setting (CSEL=1). The low selectivity filter has a flatter group channelization filter is in the baseband chip. After channel selection, the digital output is scaled with a digital PGA, which is controlled with the DGAIN [5:0] bits in register 05h.

The amplified digital output signal go through with DACs that drive a differential analog signal onto the RXIP,RXIN,RXQP and RXQN pins to interface to standard analog ADC input baseband ICs. No special processing is required in the baseband for offset compensation or extended dynamic range.

Compared to a direct-conversion architecture, the low-IF architecture has a much greater degree of immunity to dc offsets that can arise from RF local oscillator(RFLO) self-mixing, 2nd order distortion of blockers, and device 1/f noise.

(3) Frequency Synthesizer

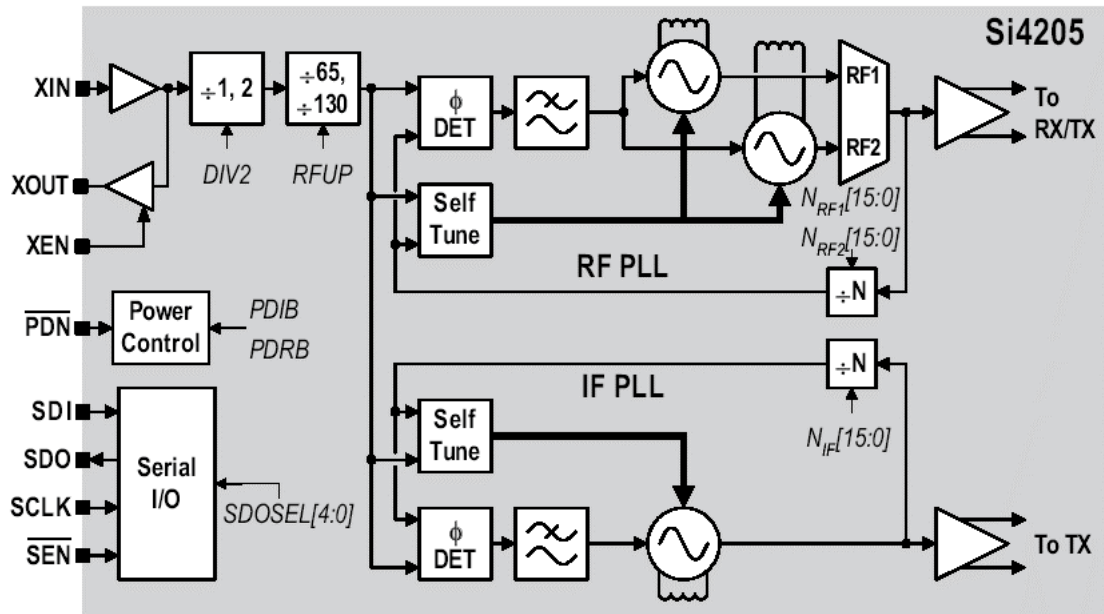


Figure. 3-4 SI4205 FREQUENCY SYNTHESIZER PART

The Aero I transceiver integrates two complete PLLs including VCOs, varactors, resonators, loop filters, reference and VCO dividers, and phase detectors. The RF PLL uses two multiplexed VCOs. The RF1 VCO is used for receive mode, and the RF2 VCO is used for transmit mode. The IF PLL is used only during transmit mode. All VCO tuning inductors are also integrated. The IF and RF output frequencies are set by programming the N-Divider registers, NRF1, NRF2 and NIF. Programming the N-Divider register for either RF1 or RF2 automatically selects the proper VCO. The output frequency of each PLL is as follows:

$$f_{\text{out}} = N \times f_{\phi}$$

The DIV2 bit in register 31h controls a programmable divider at the XIN pin to allow either a 13 or 26 MHz reference frequency. For receive mode, the RF1 PLL phase detector update rate (f_{ϕ}) should be programmed $f_{\phi} = 100$ kHz for DCS 1800 or PCS 1900 bands, and $f_{\phi} = 200$ kHz for GSM 850 and E-GSM 900 bands. For transmit mode, the RF2 and IF PLL phase detector update rates are always $f_{\phi} = 200$ kHz.

3.2 Power Amplifier Module (SKY77325, U501)

The SKY77325 Power Amplifier Module (PAM) is designed in a low profile (1.2 mm), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation. The PAM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation.

The module consists of separate GSM850/900 PA and DCS1800/PCS1900 PA blocks, impedance-matching circuitry for 50Ω input and output impedances, and a Power Amplifier Control (PAC) block with an internal current-sense resistor. The custom BiCMOS integrated circuit provides the internal PAC function and interface circuitry. Fabricated onto a single Gallium Arsenide (GaAs) die, one Heterojunction Bipolar Transistor (HBT) PA block supports the GSM850/900 bands and the other supports the DCS1800 and PCS1900 bands. Both PA blocks share common power supply pins to distribute current. The GaAs die, the Silicon (Si) die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

RF input and output ports of the SKY77325 are internally matched to a 50Ω load to reduce the number of external components for a quad-band design. Extremely low leakage current (2.5 μA, typical) of the dual PA module maximizes handset standby time. The SKY77325 also contains band-select switching circuitry to select GSM (logic 0) or DCS/PCS (logic 1) as determined from the Band Select (BS) signal. In Figure 3-5 below, the BS pin selects the PA output (DCS/PCS OUT or GSM850/900 OUT) and the Analog Power Control (VAPC) controls the level of output power.

VBATT and VSENSE pins connect to an internal current-sense resistor and interface to an integrated power amplifier control (iPAC™) function, which is insensitive to variations in temperature, power supply, process, and input power. The ENABLE input allows initial turnon of PAM circuitry to minimize battery drain

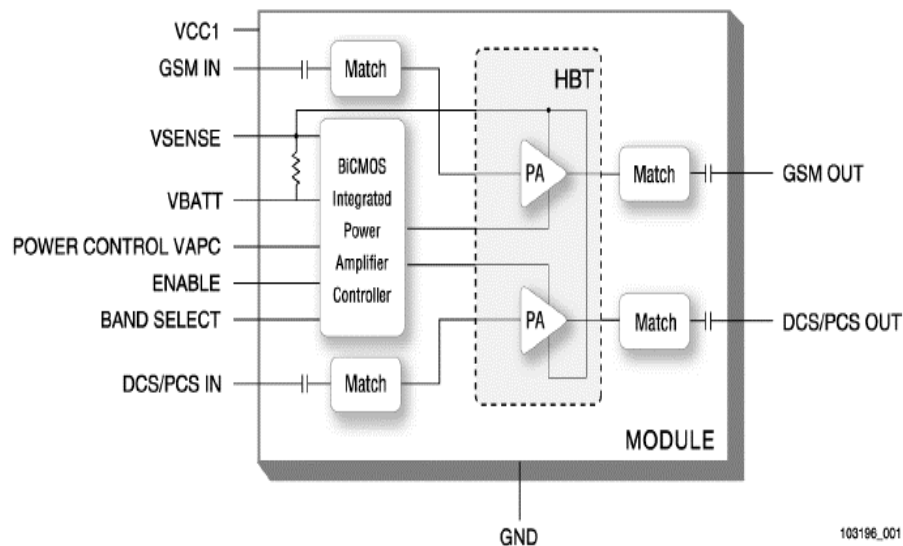
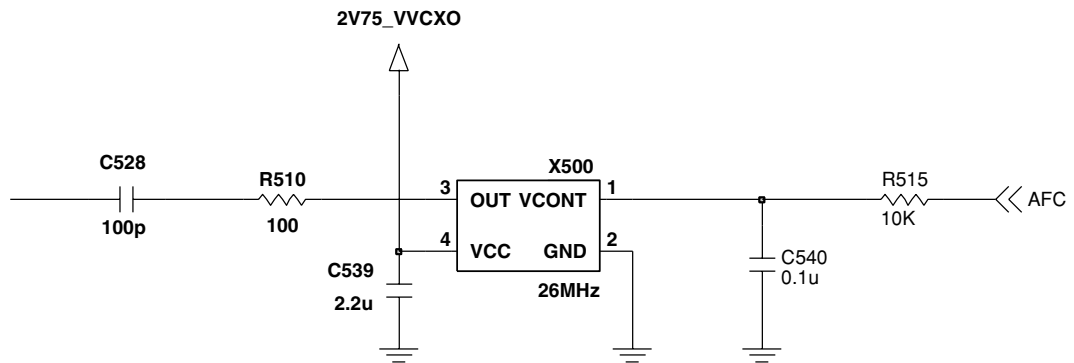


Figure. 3-5 Functional Block Diagram

3.3 26 MHz Clock (VCTCXO, X500)

The 26 MHz clock(X500) consists of a TCXO(Temperature Compensated Crystal Oscillator) which oscillates at a frequency of 26 MHz. It is used within the Si4205, chipset (U102, AD6535), digital base band and MP3/AAC (U702) chipset.

Figure 3-6 VCTCXO CIRCUIT DIAGRAM



3.4 Power Supplies for RF Circuits (RF LDO, U503)

Two regulators are used for RF circuits. One is MIC5255 (U503), and the other is one port of AD6535 (U102).

MIC5255 (U503) supplies power to transceiver (Si4205, U502). One port of AD6535 supplies power to VCTCXO (X500). Main power (VBAT) from battery is used for PAM (SKY77325, U501) because PAM requires high power.

Supplier	Voltage	Powers	Enabled signal
U303 (VRF)	2.85V	U301, U302	CLKON
U102 (VVCX0)	2.75V	X301	
Battery (VBAT)	3.4~4.2V	U302,U303	

Table 3-2 RF POWER SUPPLIERS

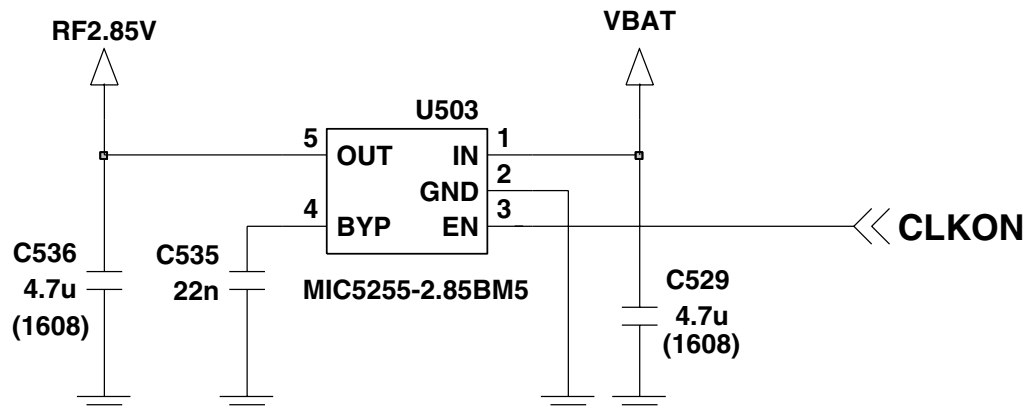


Figure 3-7 RF LDO CIRCUIT DIAGRAM

3.5 Digital Main Processor (AD6527B, U101)

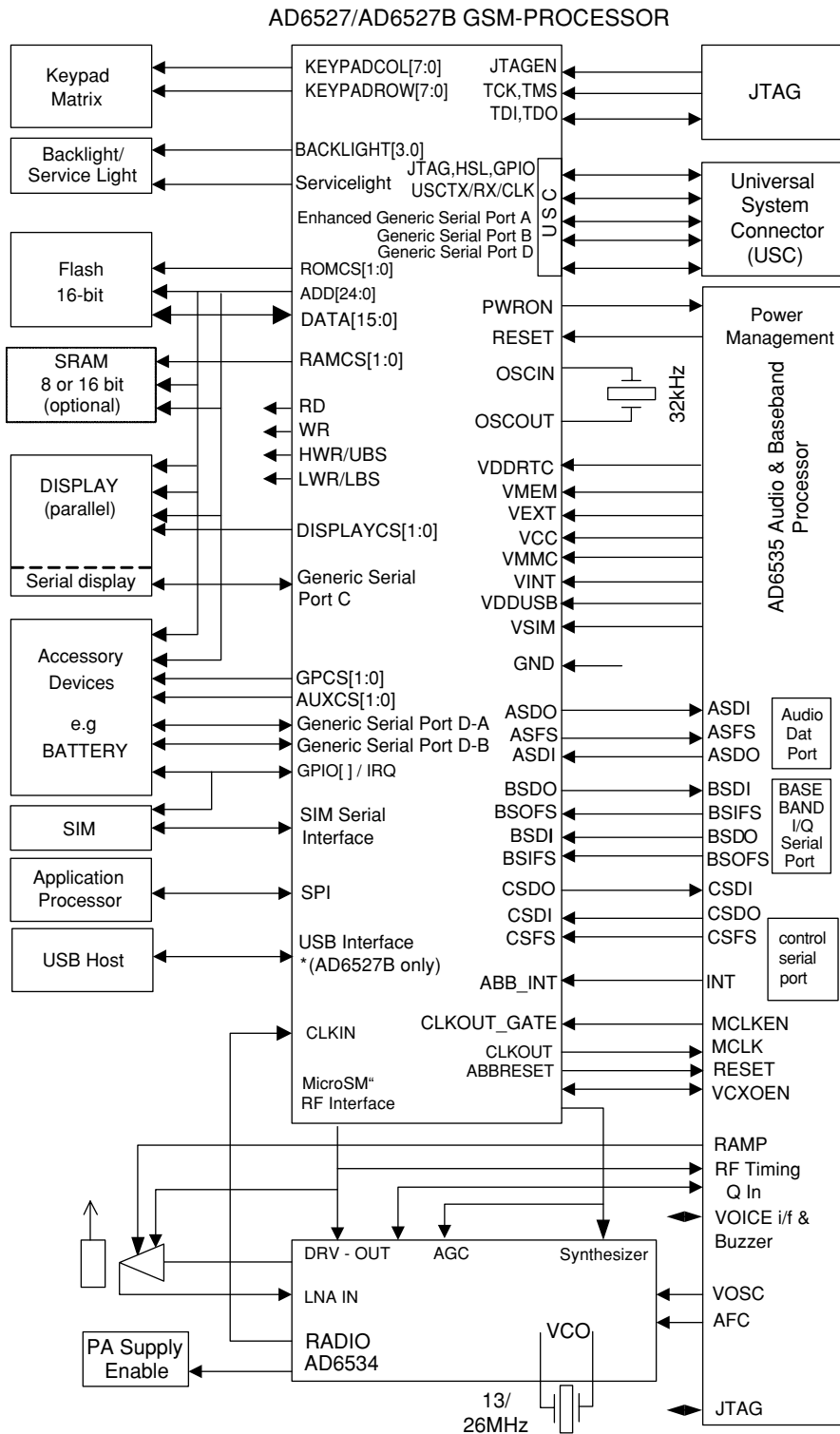


Figure 3-8. SYSTEM INTERCONNECTION OF AD6527B EXTERNAL INTERFACE

- **AD6527B is an ADI designed processor.**

- **AD6527B consists of**

1. Control Processor Subsystem

- 32-bit ARM7TDMI Control Processor
- 58.5 MHz operation at 1.7V
- On-board 16KB instruction/Data Cache
- 1 Mbits of on-chip System SRAM

2. DSP Subsystem

- 16-bit Fixed Point DSP Processor
- 91 MIPS at 1.7V
- 16K word Data and 16K word Program SRAM
- 4K word Program Instruction Cache
- Architecture supports Full Rate, Enhanced Full Rate, Half Rate, and AMR Speech Encoding/Decoding Algorithms

3. Peripheral Subsystem

- Shared on-chip peripheral and off-chip interface:
- Support for Burst and Page Mode Flash
- Support for Pseudo SRAM
- Ciphering module for GPRS supporting GAE1 and GAE2 encryption algorithms
- Parallel and Serial Display Interface
- 8 x 8 Keypad Interface
- Four independent programmable backlight plus One Service Light
- 1.8V and 3.0V, 64 kbps SIM interface
- Universal System Connector Interface
- Slow, Medium and Fast IrDA transceiver interface
- Enhanced Generic Serial Port
- Dedicated SPI interface
- Thumbwheel Interface
- JTAG Interface for Test and In-Circuit Emulation

4. Other

- Supports 13 MHz and 26 MHz Input Clocks
- 1.8V Typical Core Operating Voltages
- 204-Ball LFBGA(mini-BGA) Package

5. Applications

- GSM900/DCS1800/PCS1900/PCS850 Wireless Terminals
- GSM Phase 2+ Compliant
- GPRS Class 12 Compliant
- Multimedia Services(MMS)
- Extended Messaging System(EMS)

3. TECHNICAL BRIEF

3.5.1 Interconnection with external devices

A. RTC block interface

Countered by external X-TAL
The X-TAL oscillates 32.768KHz

B. LCD module interface

The LCD module is controlled by CAMERA IC, CL761S. If CL761S is in the state of by-pass mode, the LCD control signals from AD6527B are by-passed through CL761S. In operating mode, the CL761S controls the LCD module through L_MAIN_LCD_CS, L_SUB_LCD_CS, LCD_RESET, LCD_RS, LCD_WR, LCD_RD, L_DATA[15:00], 2V85_VCAM, IF_MODE, LCD_ID[0:2].

Signals	Description
L_MAIN_LCD_CS	MAIN LCD driver chip enable. MAIN LCD driver IC has own CS pin
L_SUB_LCD_CS	This pin resets LCD module.
LCD_RESET (GPIO 15)	This pin resets LCD module. This signal comes from DBB directly.
LCD_WR	Enable writing to LCD Driver.
LCD_RD	Enable reading to LCD Driver.
LCD_RS	This pin determines whether the data to LCD module are display data or control data. LCD_RS can select 16 bit parallel bus.
2V85_VCAM	2.85V voltage is supplied to LCD driver IC.
IF_MODE (GPO_8)	Select 16bits or 8bits interface mode for MAIN LCD. For the future
LCD_ID1 (AUXADC1 in ABB)	Select LCD module maker(2.4V : SII, 0V : HyeLCD)
LCD_ID2(GPIO_16) LCD_ID3(GPIO_17)	For the future.

Table 3-3. LCD CONTRON SIGNALS DISCRIPTION

The backlight of LCD module is controlled by DBB via AAT2807 , U402. The control signals related to Backlight LED are given below.

Signals	Description
C_FLASH (GPIO_24)	Control flash ON and OFF
LCD_DIM_CTL (GPO 23)	Control LCD backlight level in 16 steps
FLASH_LED	Voltage source for FLASH LED
MLED	Current source for backlight LED
MLED[1:3]	This pins are returned-paths for backlight LED current source (MLED)

Table 3-4. DESCRIPTION OF LCD BACKLIGHT LED CONTROL

C. RF interface

The AD6527B control RF parts through PA_BAND, ANT_SW1, ANT_SW2, CLKON , PA_EN, SEN, SDATA, SCLK, RF_PWR_DWN.

Signals	Description
PA_BAND (GPO 17)	PAM Band Select
ANT_SW1 (GPO 9)	Antenna switch Band Select
ANT_SW2 (GPO 11)	Antenna switch Band Select
CLKON	RF LDO Enable/Disable
PA_EN (GPO 16)	PAM Enable/Disable
SEN (GPO 19)	PLL Enable/Disable
SDATA (GPO 20)	Serial Data to PLL
SCLK (GPO 21)	Clock to PLL
RF_EN (GPO 4)	Tranceiver chip on/off select

Table 3-4. RF CONTROL SIGNALS DISCRIPTION

3. TECHNICAL BRIEF

D. SIM interface

The AD6527B provides SIM Interface Module. The AD6527B checks status periodically during established call mode whether SIM card is inserted or not, but it doesn't check during deep Sleep mode. In order to communicate with SIM card, 3 signals SIM_DATA, SIM_CLK, SIM_RST(GPIO_23) are required. The descriptions about the signals are given by bellow Table 3-6 in detail.

Signals	Description
SIM_DATA	This pin receives and sends data to SIM card. This model can support 3.0 volt Interface SIM card Only.
SIM_CLK	Clock 3.25MHz frequency.
SIM_RST(GPIO_23)	Reset SIM block

Table 3-6. SIM CONTRON SIGNALS DISCRIPTION

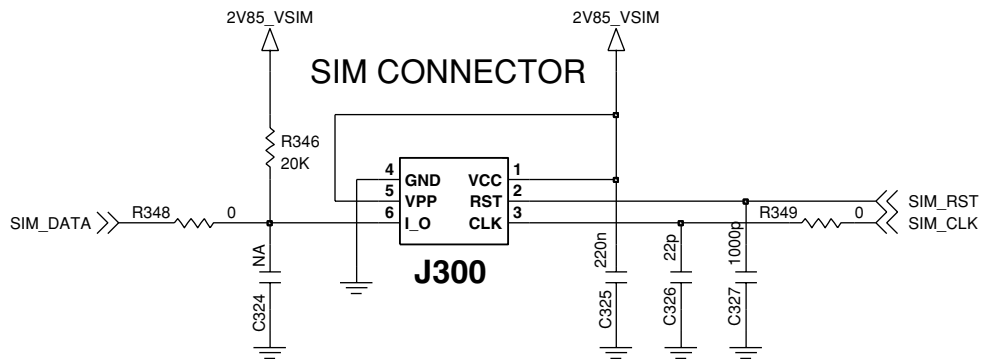


Figure 3-9. SIM Interface of AD6527B

E. Key interface

Include 5 column , 5 row and additional GPIO 35 for KEY_ROW5. The AD6527B detects whether key is pressed or not by using interrupt method.

F. AD6535 Interrupt

AD6535 provides an active-high interrupt output signal. Interrupt signals are generated by the Auxiliary ADC, audio, and charger modules.

3.5.2 AD6527B Architecture

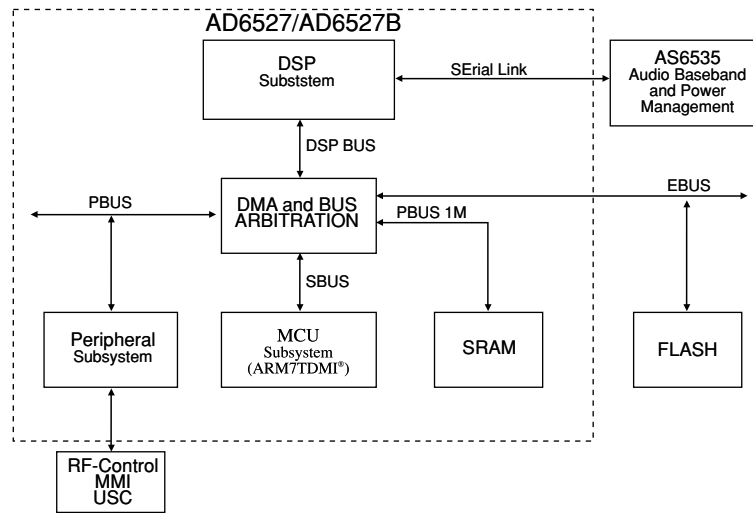


Figure 3-10. AD6527B Architecture

The internal architecture of AD6527B is shown above Figure 3-10. AD6527B regroups three main subsystems connected together through a dynamic and flexible communication bus network. It also includes onboard system RAM (SRAM) and interfaces with external Flash Memory, Baseband converter functions, and terminal functions like MMI, SIM and Universal System Connector (USC).

The Digital Signal Processing (DSP) subsystem primarily hosts all the speech processing, channel equalization and channel codec functions. The code used to implement such functions can be stored in external Flash Memory and dynamically downloaded on demand into the DSP's program RAM and Instruction Cache.

The micro-controller subsystem supports all the GSM terminal software, including the layer 1, 2 and 3 of the GSM protocol stack, the MMI, and applications software such as data services, test and maintenance. It is tightly associated with on-chip system SRAM and also includes boot ROM memory with a small dedicated routine to facilitate the initialization of the external Flash Memory via code download using the on-chip serial interface to the external Flash Memory interface.

The peripheral subsystem is composed of system peripherals such as interrupt controller, real time clock, watch dog timer, power management and a timing and control module. It also includes peripheral interfaces to the terminal functions: keyboard, battery supervision, radio and display. Both the DSP and the MCU can access the peripheral subsystem via the peripheral bus (PBUS).

For program and data storage, both the MCU subsystem and the DSP subsystem can access the on chip system SRAM and external memory such Flash Memory. The access to the SRAM module is made through the RAM Bus (RBUS) under the control of the bus arbitration logic. Similarly, access to the Flash Memory is through the parallel External Bus (EBUS).

3.6 Analog Main & Power Management Processor (AD6535, U102)

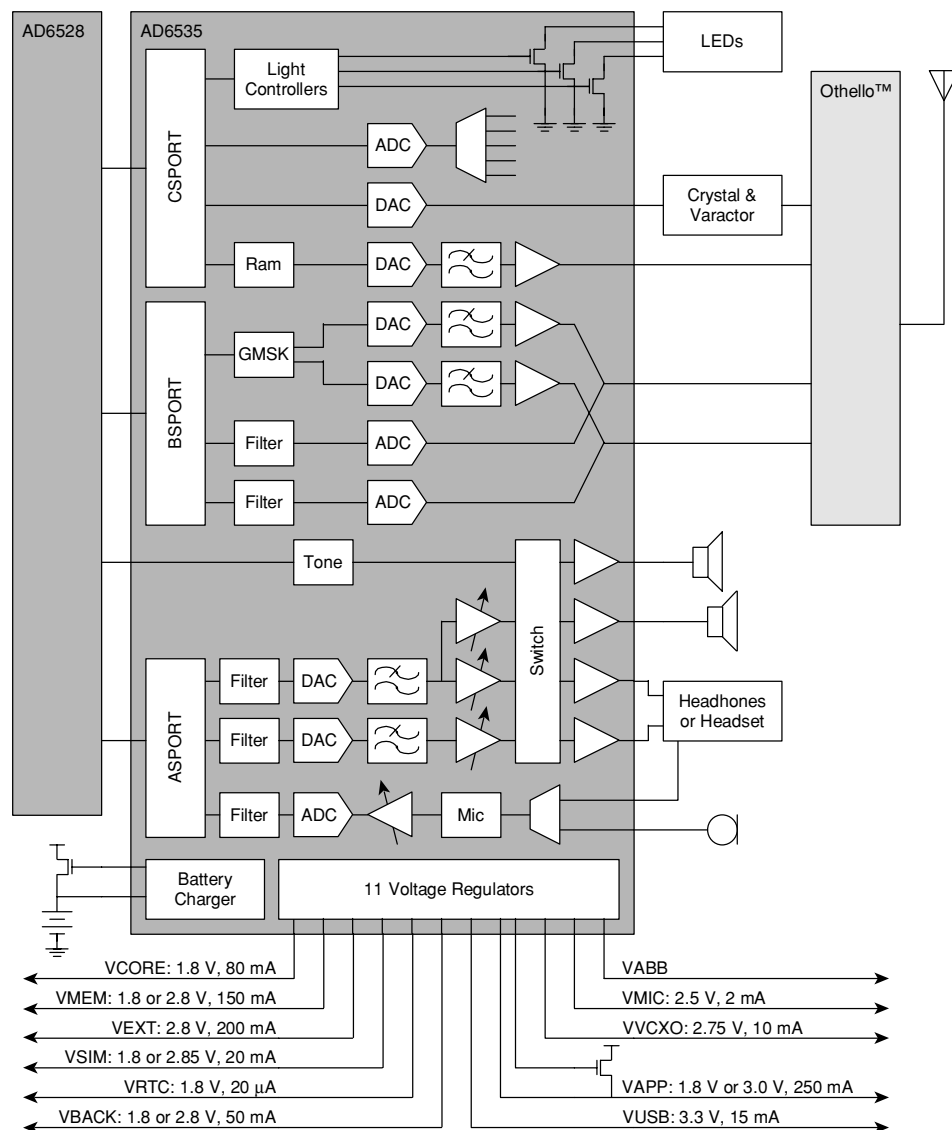


Figure 3-11. AD6535 FUNCTIONAL BLOCK DIAGRAM

- **AD6535 is an ADI designed Analog Baseband processor. AD6535 covers the processing GMSK modulation interface, Aux ADC, Voice signal processing and Power Management.**

- **AD6535 consists of**

1. BB Transmit section

- This section generates in-phase and quadrature BB modulated GMSK signals.
- Digital GMSK modulator, 10-bit DACs, Reconstruction Filter

2. BB Receive section

- 2 identical ADC channels that process BB in-phase and quadrature input signals.

3. Auxiliary section

- 2 auxiliary DACs AFC DAC, IDAC, AUX ADC
- AUX ADC : 6 channels 10 bits
- AFC DAC : 13 bits
- IDAC : 10 bits

4. Voiceband section

- Receive audio signal from MIC.
- Send audio signal to Speaker
- It interconnect with external device like main microphone, main receiver, headset microphone and Hands-free kit.

5. Power Management section

- 11 LDOs Block in the AD6535.
 - V_{CORE}, V_{MEM}, V_{EXT}, V_{SIM}, V_{RTC}, V_{BACK}, V_{ABB}, V_{MIC}, V_{VCXO}, V_{APP}, V_{USB}
- Battery Charging Block

3. TECHNICAL BRIEF

3.6.1 Baseband Transmit Section

1. The AD6535 Baseband Transmit Section is designed to support GMSK for both single-slot and multi-slot application.
2. The transmit channel consists of a digital GMSK modulator, a matched pair of 10-bit DACs and a matched pair of reconstruction filter.

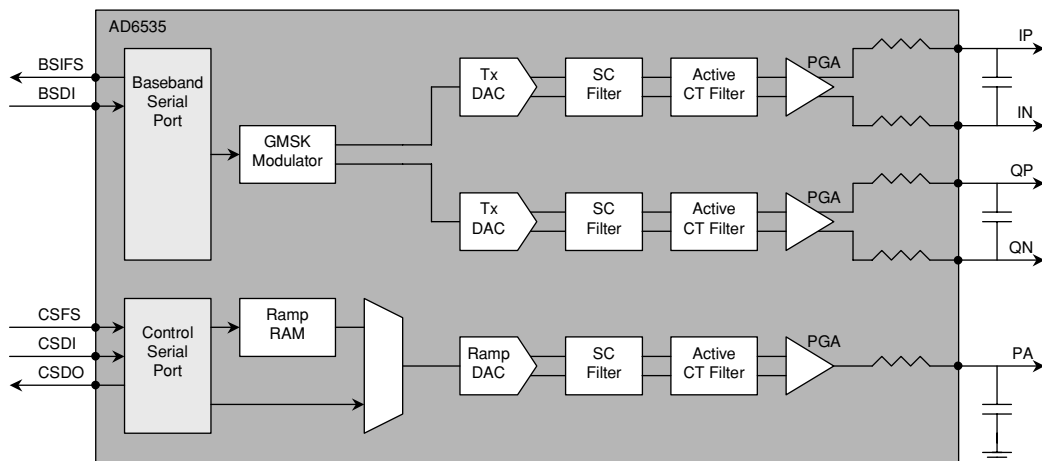


Figure 3-12. AD6535 BASEBAND TRANSMIT SECTION

3.6.2 Baseband Transmit Section

1. This section consists of two identical ADC channels that process baseband in-phase(I) and quadrature(Q) input signals.

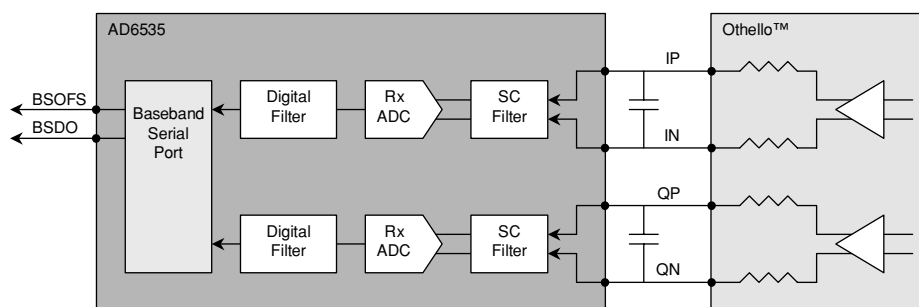


Figure 3-13. AD6535 BASEBAND RECEIVER SECTION

3.6.3 Auxiliary Section

1. This section includes an Automatic Frequency Control(AFC)DAC,voltage reference buffers, an Auxiliary ADC,and light controllers.
 - AFC DAC:13 bits
2. This section also contains AUX ADC and Voltage Reference
 - IDAC:10 bits
 - The Auxiliary ADC provides :
 - Two differential inputs for temperature sensing.
 - A differential input for the battery charger current sensor

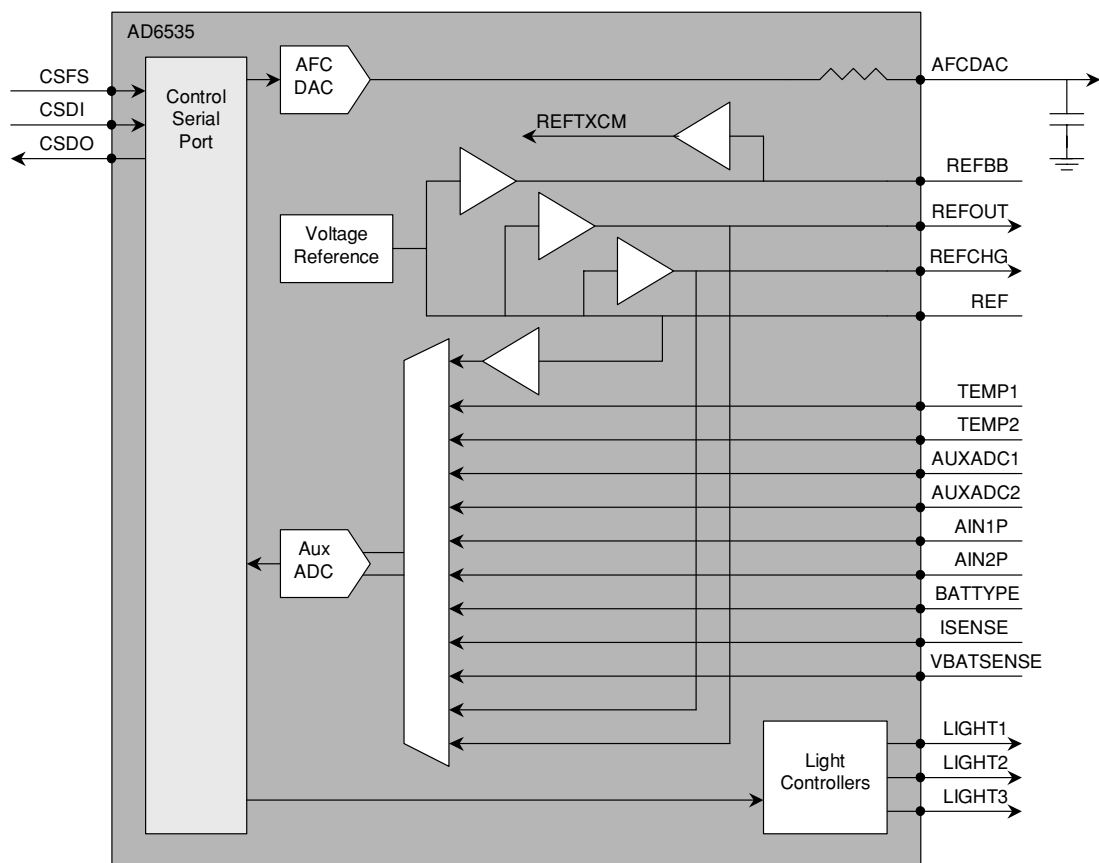


Figure 3-14.AD6535 AUXILIARY SECTION

3.6.4 Audio Section

1. Receive audio signal from microphone.C3400 uses differential configuration.
2. Send audio signal to speaker.C3400 uses differential configuration.
3. This section provides an audio codec with a digital-to-analog converter and an analog- to- digital converter,a ring tone volume controller,a microphone interface,and multiple analog input and output channels.
4. It interconnects with external devices like main microphone,main receiver,and headset. The descriptions of audio port used in C3400 are given bellow in detail.

<Up Link>

- AIN1P,AIN1N :Main microphone positive/negative terminal
- AIN2P,AIN2N :Headset microphone positive/negative terminal
- AIN3L,AIN3R :External Analog Input terminal

<Down Link>

- AOUT1P,AOUT1N :Main Speaker positive/negative terminal
- AOUT3L,AOUT3R :Headset speaker Left /Right terminal

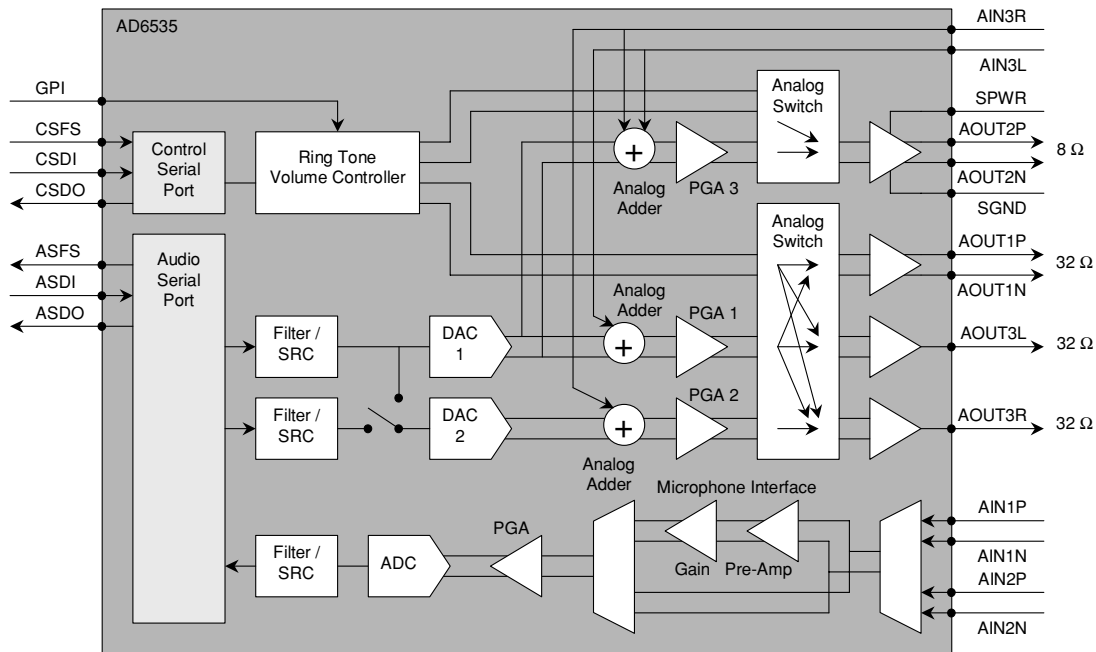


Figure 3-15.AD6535 AUDIO SECTION

3.6.5 Power Management

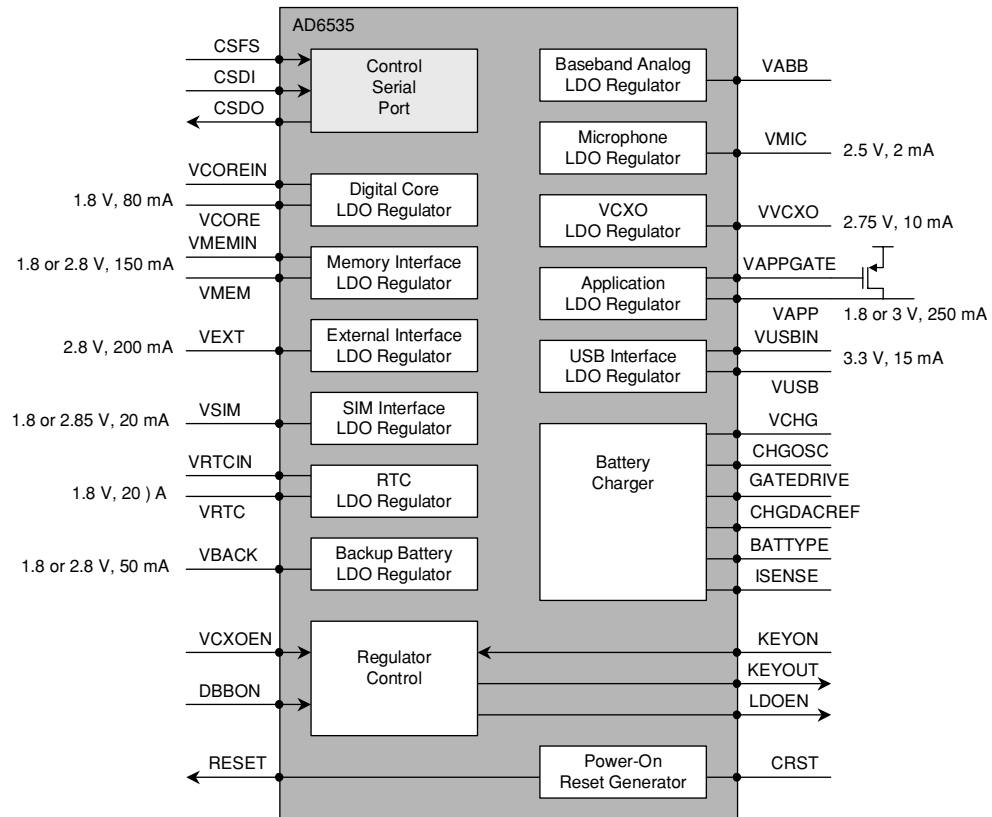


Figure 3-16.AD6535 POWER MANAGEMENT SECTION

1. Power up sequence logic

1. The AD6535 controls power on sequence
2. Power on sequence
 - If a battery is inserted, the battery powers the 11 LDOs.
 - Then if PWRONKEY is detected, the LDOs output turn on.
 - REFOUT is also enabled
 - Reset is generated and send to the AD6527B

3. TECHNICAL BRIEF

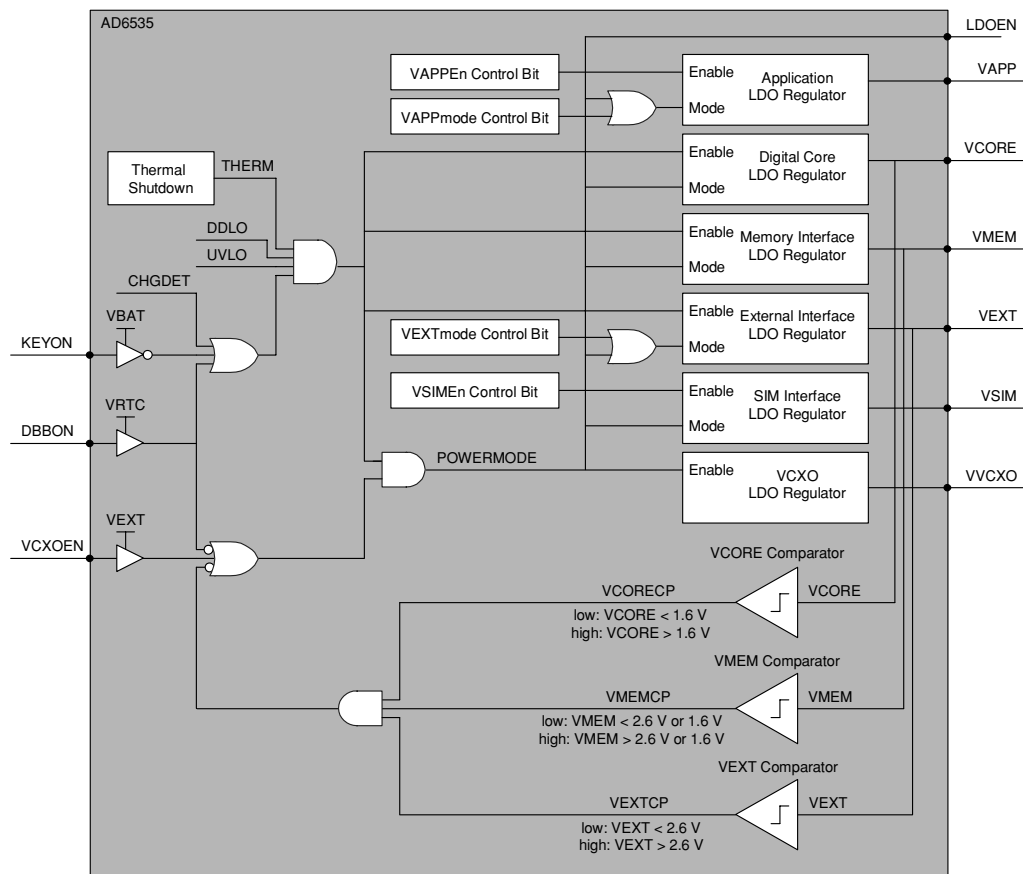


Figure 3-17. AD6535 POWER MODE LOGIC

2. LDO Block

1. There are 11LDOs in the AD6535.

- VCORE : supplies Digital baseband Processor core and AD6535 digital core (1.8V, 80mA)
- VMEM : supplies external memory and the interface to the external memory on the digital baseband processor (1.8V or 2.8V, 150mA)
- VEXT : supplies Radio digital interface and high voltage interface (2.93V, 170mA)
- VSIM : supplies the SIM interface circuitry on the digital processor and SIM card (1.8V or 2.85V, 20mA)
- VRTC : supplies the Real-Time Clock module (1.8 V, 20 μ A)
- VABB : supplies the analog portions of the AD6535
- VMIC : supplies the microphone interface circuitry (2.5 V, 2 mA)
- VVCXO : supplies the voltage controlled crystal oscillator (2.75 V, 10 mA)
- VAPP : supplies the application (1.8V or 3.0V, 250mA)
- VBACK : supplies the backup battery (1.8V or 2.8V, 50mA)
- VUSB : supplies the USB Interface (3.3V, 15mA)

3. Battery Charging Block

1. It can be used to charge Lithium Ion and/or Nickel Metal Hydride batteries. Charger initialization, trickle charging, and Li-Ion charging control are implemented in hardware.
2. Charging Process
 - Check charger is inserted or not
 - If AD6535 detects that Charger is inserted, the CC-CV charging starts.
 - Exception : When battery voltage is lower than 3.2V, the pre-charge (low current charge mode) starts firstly.
 - And the battery voltage reach to 3.2V the CC-CV charging starts.
3. Pins used for charging
 - VCHG : charger supply.
 - GATEDRIVE : charge DAC output
 - ISENSE : charge current sense input
 - VBATSENSE : battery voltage sense input.
 - BATTYPE : battery type identification input
 - REFCHG : voltage reference output
4. TA (Travel Adaptor)
 - Input voltage: AC 85V ~ 260V, 50~60Hz
 - Output voltage: DC 5.2V (0.2 V)
 - Output current: Max 800mA (50mA)
5. Battery
 - Li-ion battery (Max 4.2V, Nom 3.7V)
 - Standard battery: Capacity - 1000mAh

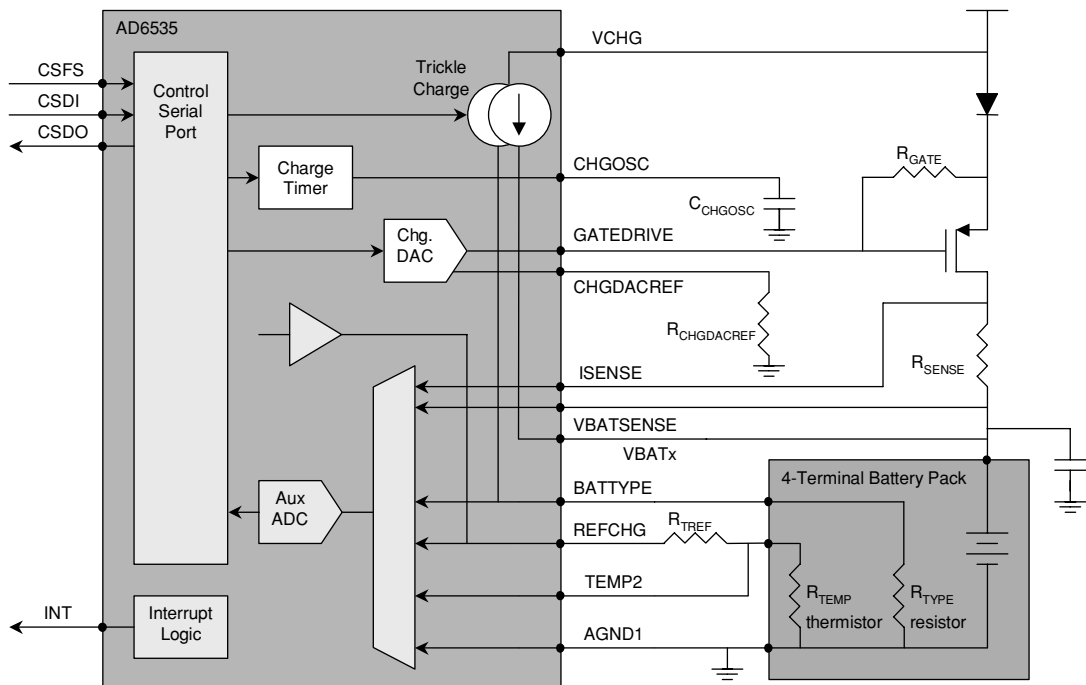


Figure 3-18. AD6535 BATTERY CHARGING BLOCK



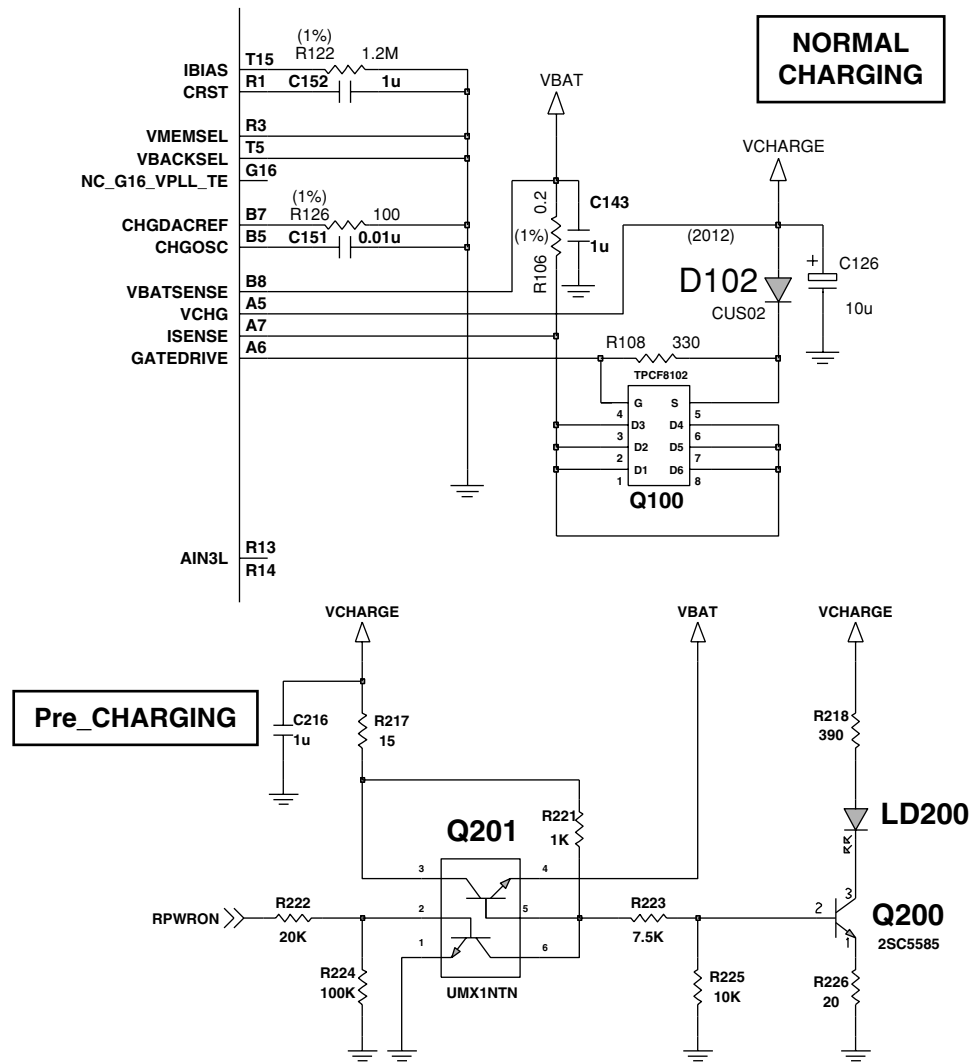


Figure 3-21. CIRCUIT FOR BATTERY CHARGING AT AD6535

In order to reduce time for trickle charging, additional circuit(Pre-charge circuit) was included. This circuit has supplied Max 160mA current into the battery additionally.

So call it, it reduce trickle charging time

3.7 Memory (RD38F3350LLZDQ0, U302)

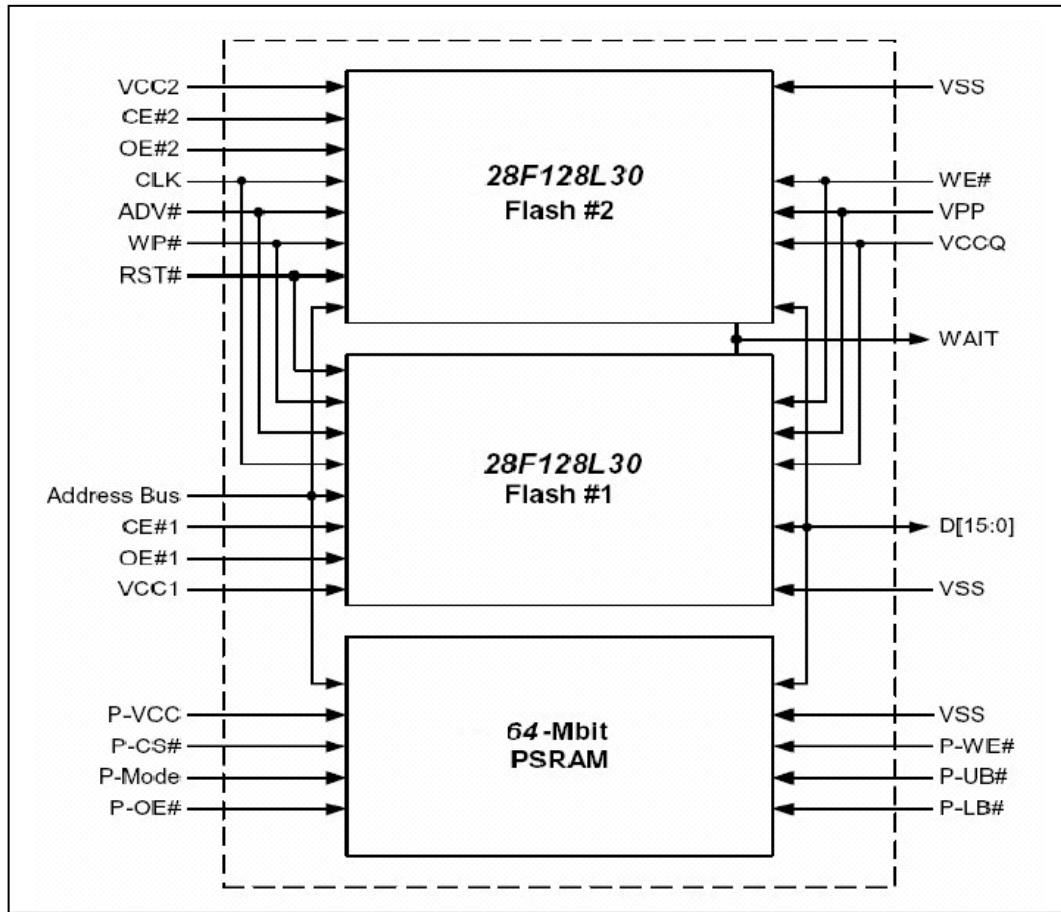


Figure 3-22. MEMORY BLOCK DIAGRAM

- 128Mbits flash memory + 128Mbits flash memory + 64Mbits PSRAM
- 16 bit parallel data bus
- ADD01 ~ ADD23.
- RF Calibration data, Audio parameters and battery calibration data etc are stored in Flash memory area.

3.8 Display and Interface

• Main LCD

Properties	Spec.	Unit
Active Screen Size	28.022(H) X 35.03(V)	mm
Color Depth	65,000	colors
Resolution	128 X RGB X 160	dots
Pixel Size	0.063(H) X 0.209(V)	mm

• Sub LCD

Properties	Spec.	Unit
Active Screen Size	18.902(H) X 13.43(V)	mm
Color Depth	Mono	
Resolution	96 X 64	dots
Pixel Size	0.187(H) X 0.2(V)	mm

Controlled by L_MAIN_LCD_CS, LCD_RESET, LCD_RS, LCD_WR, LCD_RD, IFMODE, L_DATA[00:15] ports

- L_MAIN_LCD_CS : MAIN LCD driver chip enable. MAIN LCD driver IC has own CS pin
- LCD_RST This pin resets LCD module. This signal comes from DBB directly.
- LCD_RS : This pin determines whether the data to LCD module are display data or control data.
- IFMODE : This can select 16bits or 8bits parallel bus. But for the future.
Default is low (low is 16bits interface)
- L_WR : Write control Signal
- L_RD : Read control Signal. But this pin used only for debugging.
- L_DATA[00:15] : Parallel data lines.
- LCD_ID[1:2] : LCD type selection signals
 - LCD_ID1 : LCD maker(2.4V is SII, 0V is HyeLCD)
 - LCD_ID[2:3] : for the future using
- For using 65K color, data buses should be 16 bits.



3.9 Camera Interface

C3400 has a built-in VGA(640 x 480) camera module. And the camera produces JPG pictures. Camera module is controlled by CL761S. Interface is done by I2C and YCbCr format. I2C is a control signal and YCbCr is real data interface signal.

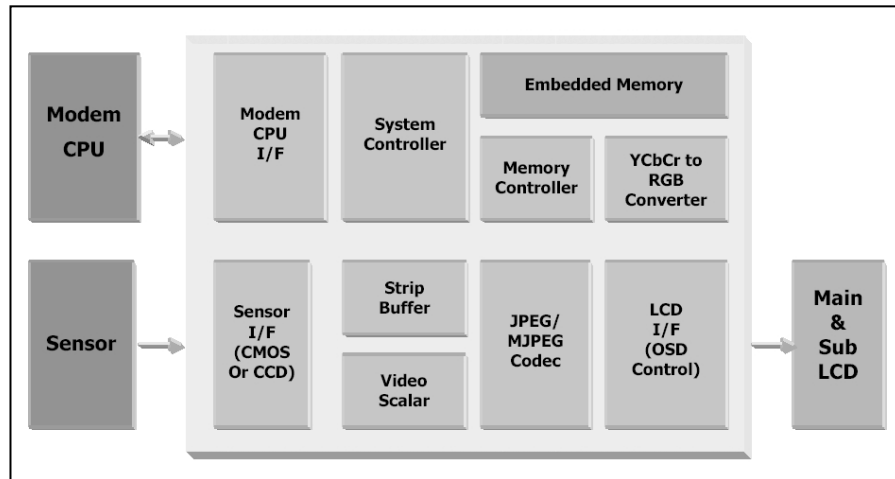


Figure 3-24. CL761S BLOCK DIAGRAM

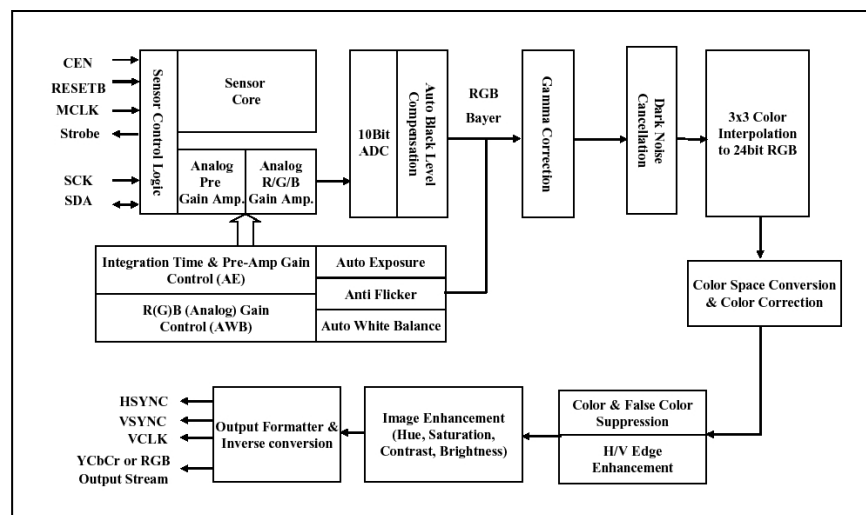
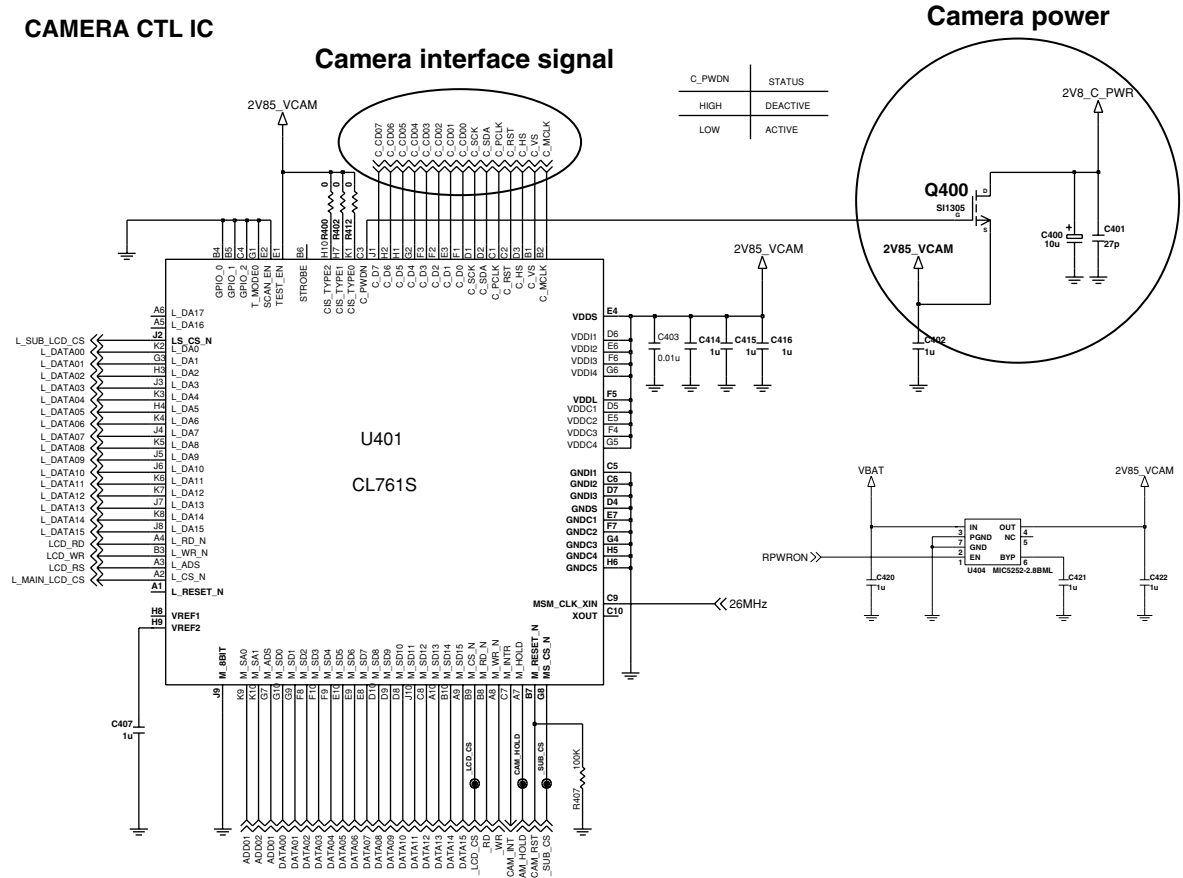


Figure 3-25. SENSOR CHIP BLOCK DIAGRAM



3.10 Keypad Switches and Scanning

The key switches are metal domes, which make contact between two concentric pads on the keypad layer of the PCB when pressed. There are 27 switches (Normal Key 24EA, Camera side key, Volume up down side key), connected in a matrix of 5 rows by 5 columns and additional GPIO 35 for KEY_ROW5, as shown in Figure 3-24, except for the power switch (KB1), which is connected independently. Functions, the row and column lines of the keypad are connected to ports of AD6527B. The columns are outputs, while the rows are inputs and have pull-up resistors built in.

When a key is pressed, the corresponding row and column are connected together, causing the row input to go low and generate an interrupt. The columns/rows are then scanned by AD6527B to identify the pressed key.

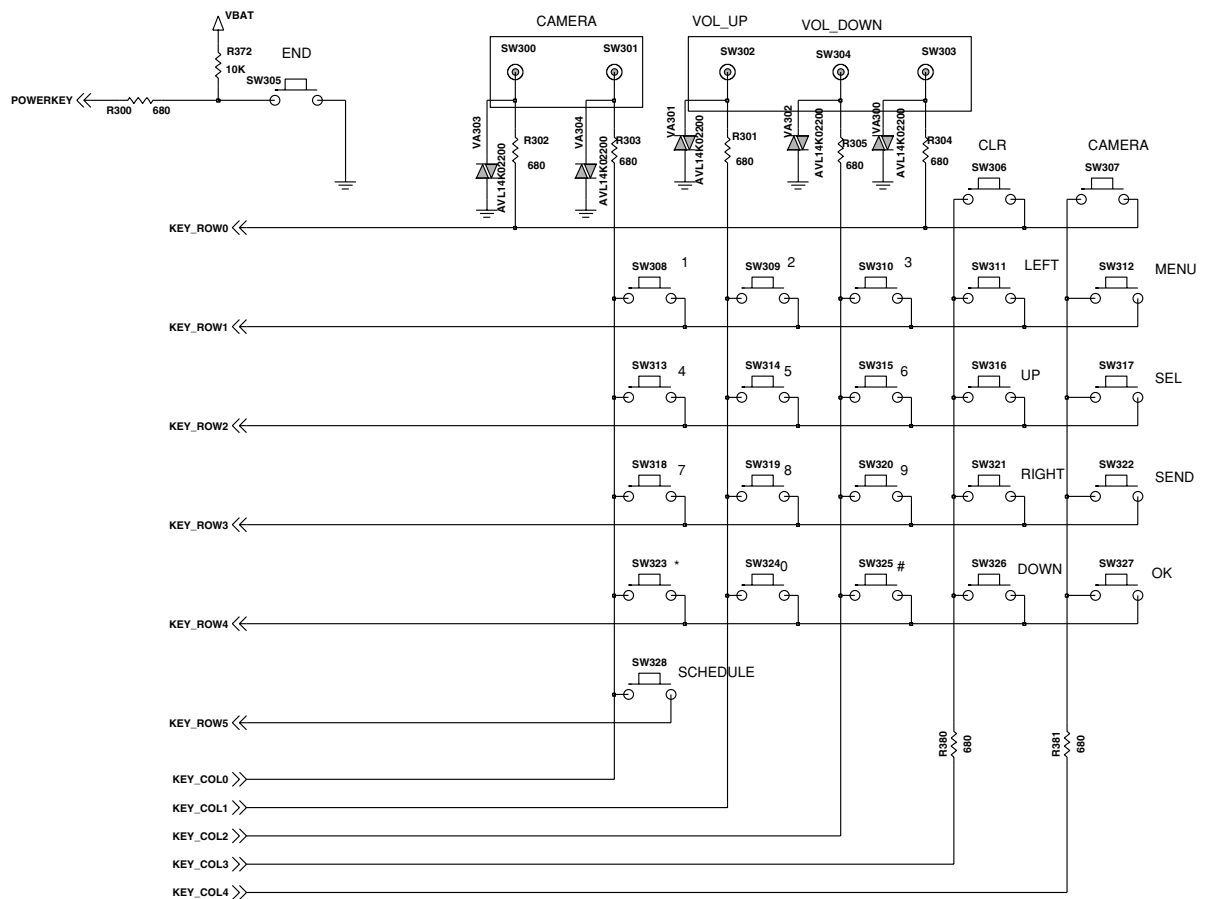


Figure 3-27. Keypad Switches and Scanning

3.11 Microphone

The microphone is placed to the front cover and contacted to main PCB. The audio signal is passed to AIN1P and AIN1N pins of AD6535. The voltage supply VMIC is output from AD6535, and is a biased voltage for the AIN1P. The AIN1P and AIN1N signals are then A/D converted by the Voiceband ADC part of AD6535. The digitized speech (PCM 8KHz , 16KHz) is then passed to the DSP section of AD6527B for processing (coding, interleaving etc).

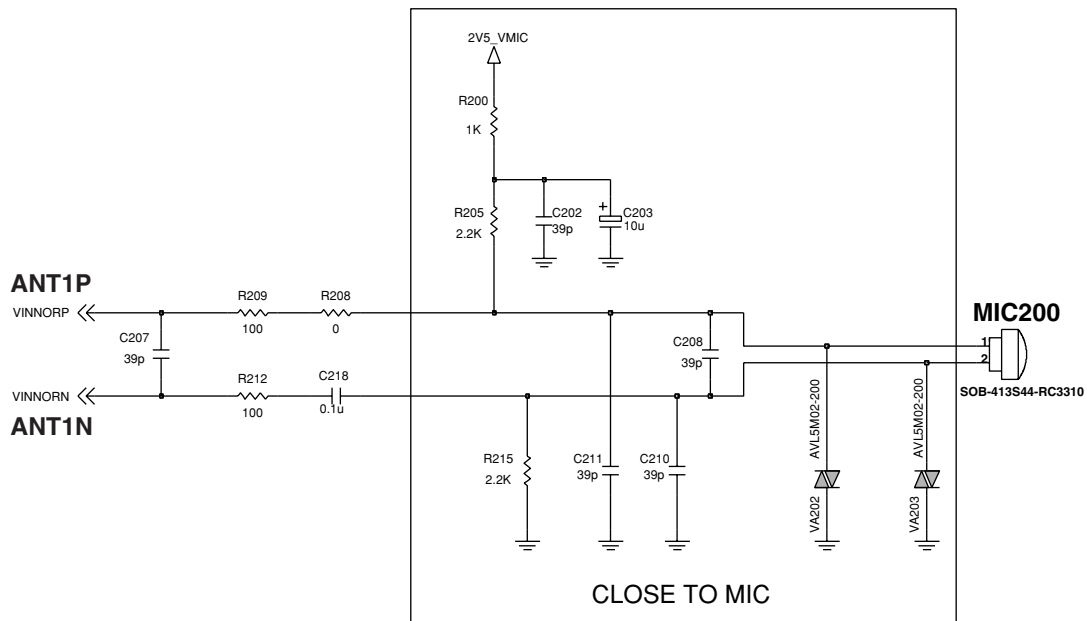


Figure 3-28. Connection between Microphone and AD6535

3.12 Main Speaker

In the case of C3400 , there are 3 different speakers. One is main speaker for the received voice, another are loud speaker for playback of ring tone , key tone and other MIDI sounds and the other is headset speaker.

The main speaker is driven directly from AD6535 AOUT1P and AOUT1N pins and the gain is controlled by the PGA in an AD6535. The receiver is placed in the folder cover and connected to AOUT1x terminal via FPCB.

3.13 Headset Interface

This phone chooses a 6 pin type headset which has 6 electrodes such as GND, AUXIP, AUXIN (this pin is floating), EAR_SPK_R, EAR_SPK_L, JACK_DETECT, HOOK_DETECT. This type supports stereo sound

Switching from Receiver to Headset Jack

If jack is inserted, JACK_DETECT goes from low to high.

Audio path is switched from receiver to earphone by JACK_DETECT interrupt.

Switching from Headset Jack to Receiver

If jack is removed, JACK_DETECT goes from high to low.

Audio path is switched from earphone to receiver by JACK_DETECT interrupt.

Hook detection

If hook-button is pressed, HOOK_DETECT is changed from high to low.

This is detected by AUXADC2.

And then hook is detected.

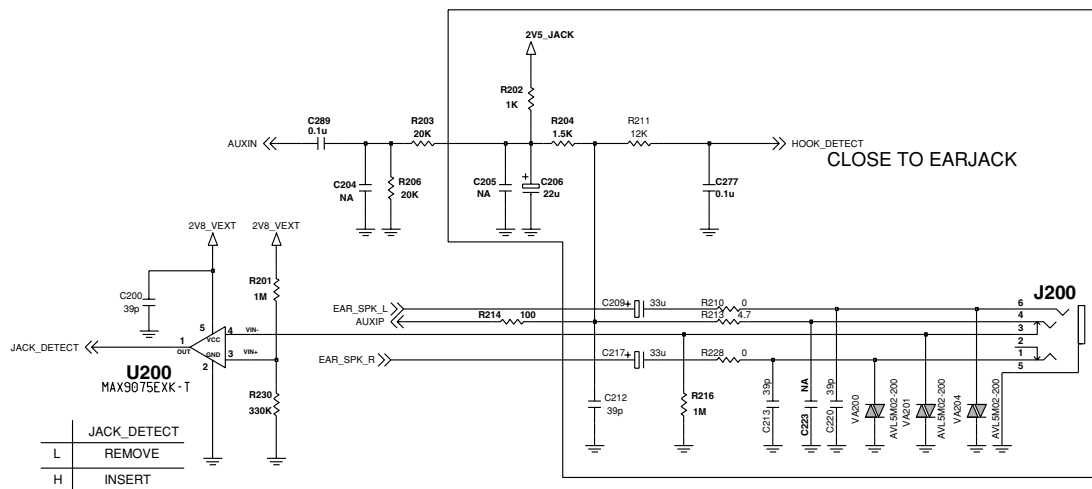


Figure 3-29. HEADSET JACK INTERFACE

3.14 MP3/AAC Decoder(uPD9993, U702) & Amplifier(LM4923, U703)

C3400 has the PCM sound generator and the MP3/AAC decoder.

The main features are below

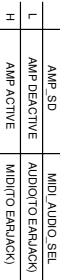
- PCM sound generation method provides realistic sound reproduction.
- built in digital signal processor for MP3/AAC decoder.
- supports up to 64poly
- supports 8bits parallel Interface and SPI interface.
(C3400 uses 8bits parallel interface.)
- supports differential MONO output and stereo output
- supports 1.5V core and 3.0V or 1.8V IO interface

C3400 is using a external amplifier. This amplifier supports differential MONO output for main speaker and stereo output for headset speaker.

- Output Power at 1% THD+N, 1kHz :
 - for 8ohm, typically 1.1W
 - for 32ohm, typically 95mW

This part is using interface signals in below

- _MIDI_CS : This signal selects uPD9993.
- _MIDI_RST(GPIO_12) : This signal resets uPD9993 chip.
- ADD[00:02] : This signals address internal registers.
- _WR : write enable signal. This signal is connected with Memory and DBB directly.
- _RD : read enable signal. This signal is connected with Memory and DBB directly.
- DATA[08:15] : interface data bus.
- _MIDI_IRQ(GPIO_37) : uPD9993 interrupt signal.
- AMP_SD : This signal controls an active-status or a de-active status of amplifier.
If level is high, amplifier is de-active otherwise active.
- SPK_EAR_SEL : This signal selects output path in main speaker or head speaker.
If level is high, output path is to ear speaker, otherwise main speaker.



3.15 Key Back-light Illumination

In key back-light illumination, there are 12 Blue LEDs in Main Board, which are driven by KEY_BACKLIGHT signal from AD6527B.

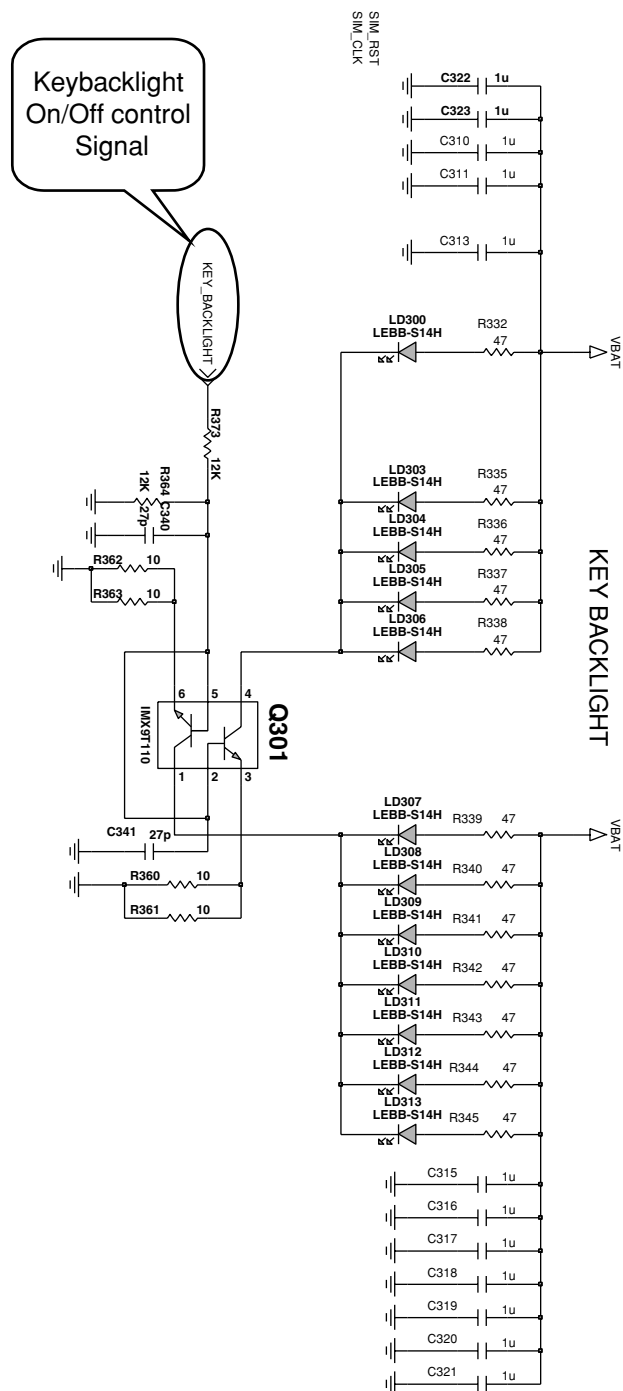


Figure 3-31. KEY BACK-LIGHT ILLUMINTION

3.16 LCD Back-light Illumination

LCD backlight LEDs is controlled by DBB via AAT2807, U402.

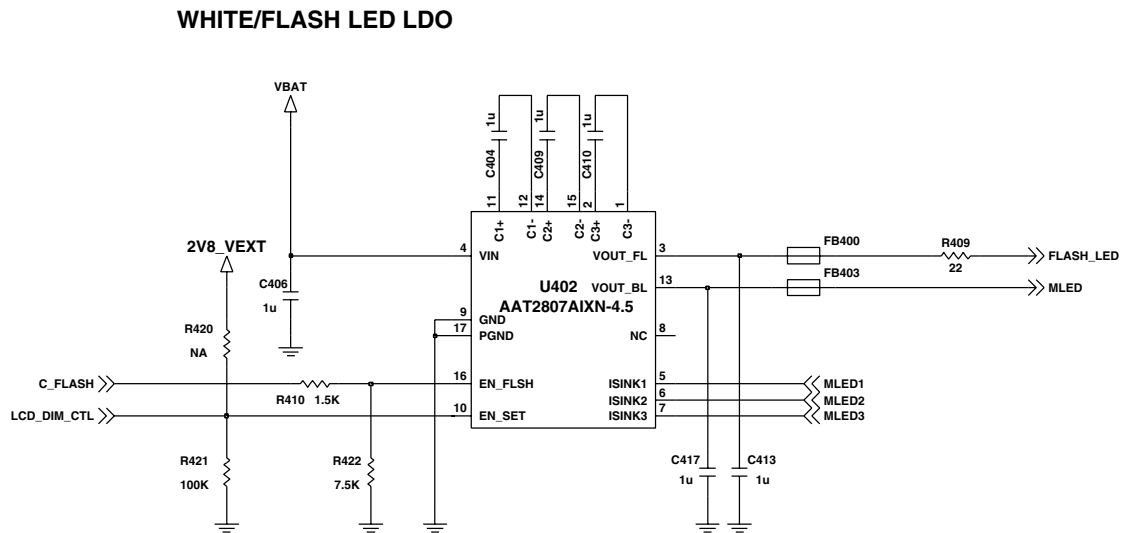


Figure 3-32. MAIN LCD BACKLIGHT ILLUMINATION

3.17 VIBRATOR

The vibrator is placed in the folder cover and contacted to LCD MODULE. The vibrator is driven from VIBRATOR (GPIO_3) of AD6527B.

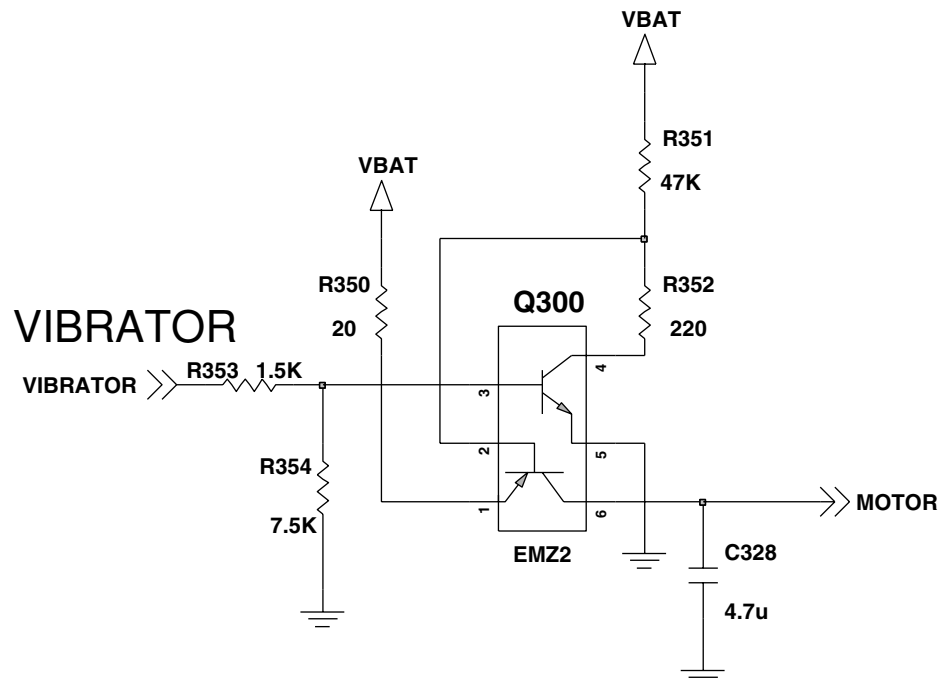


Figure 3-33. MOTOR

4. TROUBLESHOOTING

4.1 RX Trouble

TEST POINT

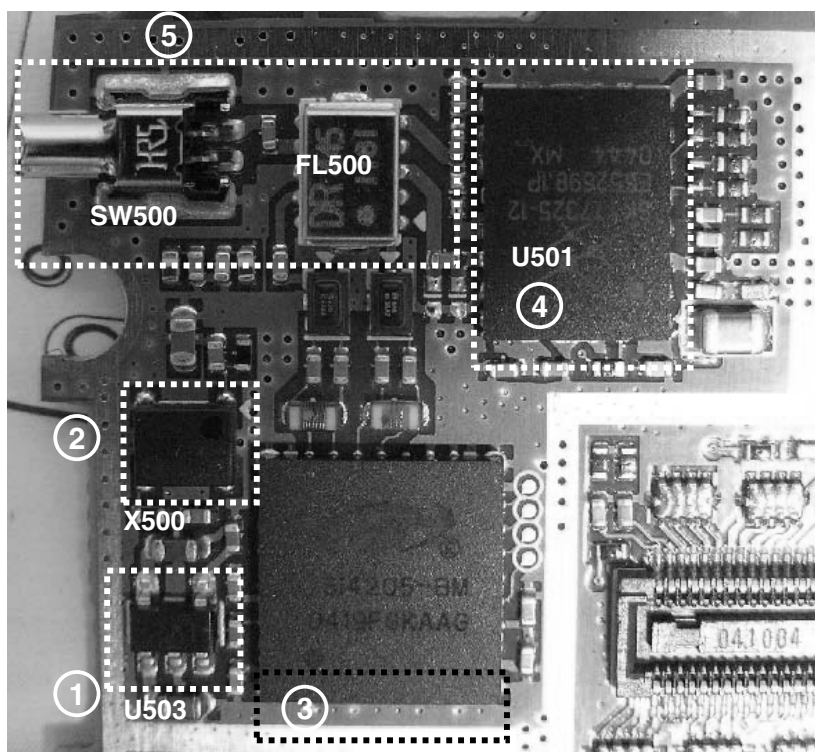
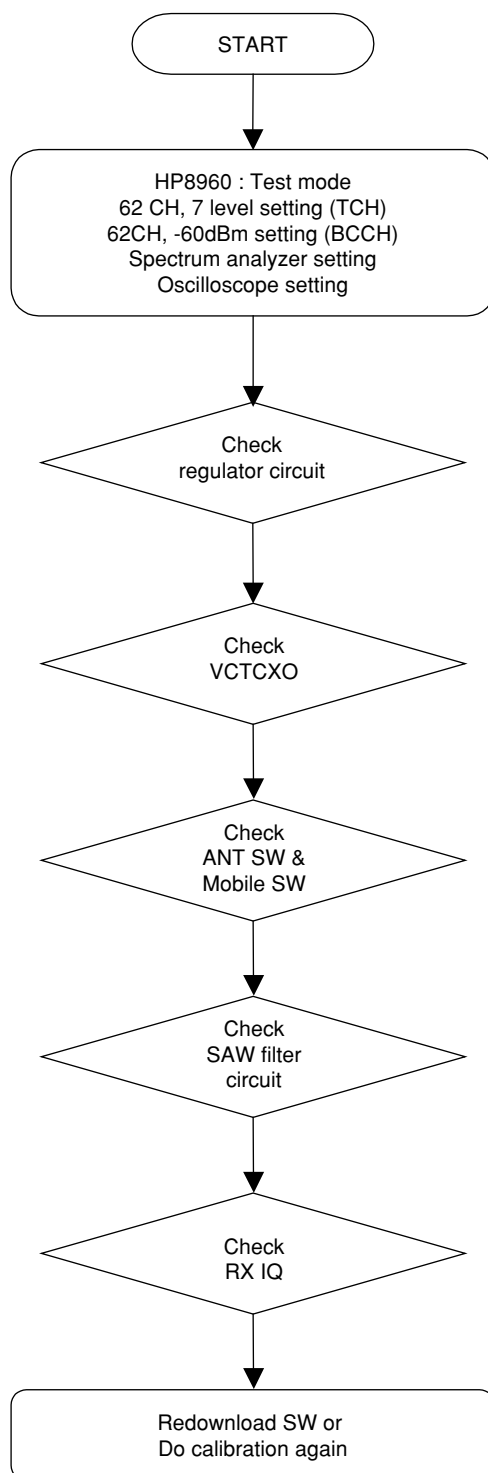


Figure 4-1(a)

4. Troubleshooting

Checking Flow



(1) Checking Regulator Circuit

TEST POINT

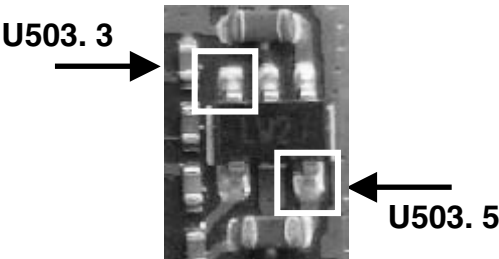
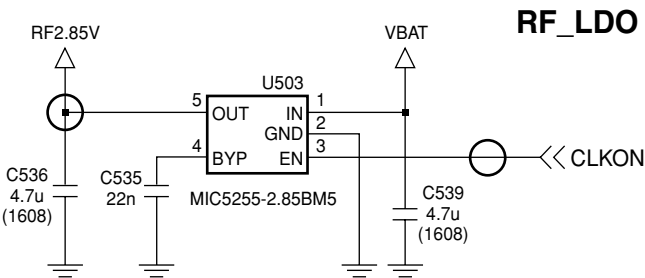
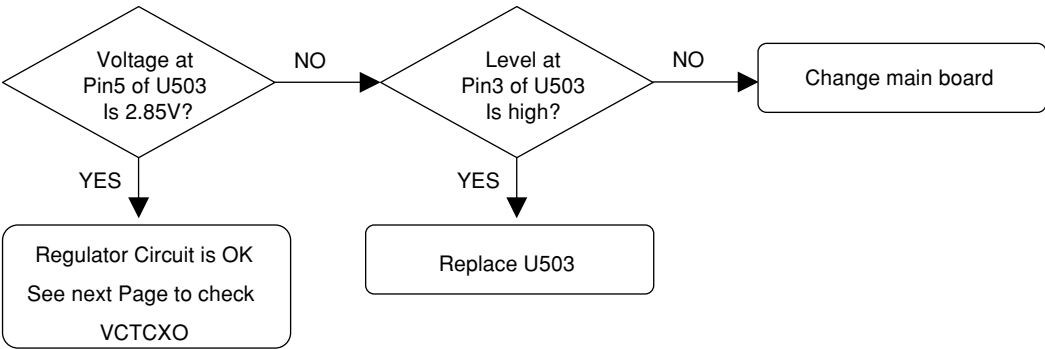


Figure 4-2

CIRCUIT



Checking Flow



4. Troubleshooting

(2) Checking VCTCXO Circuit

TEST POINT

Checking Flow

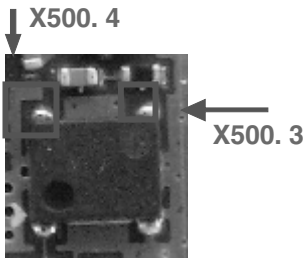
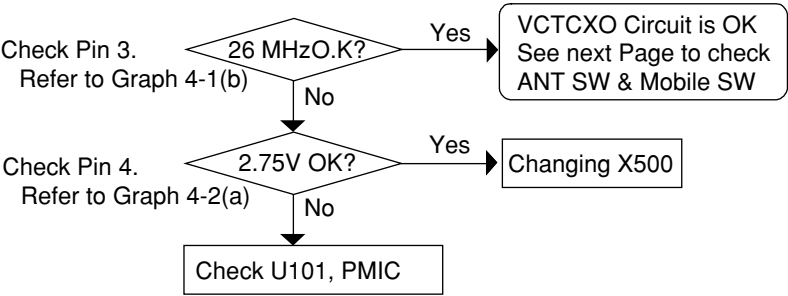
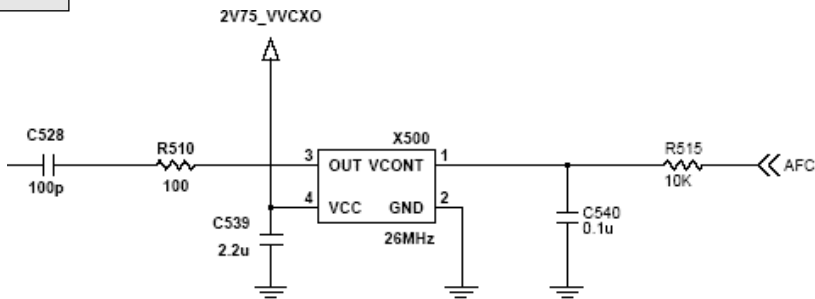


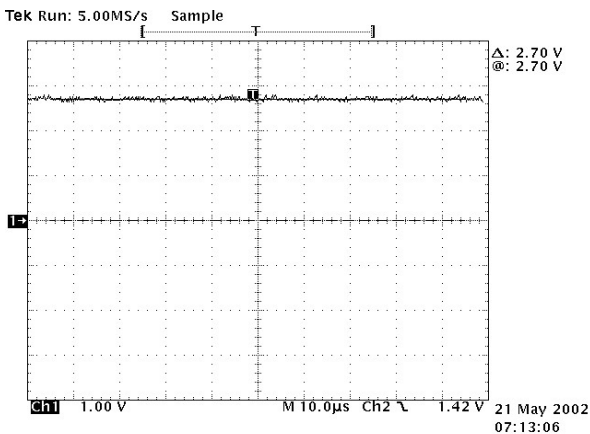
Figure 4-3



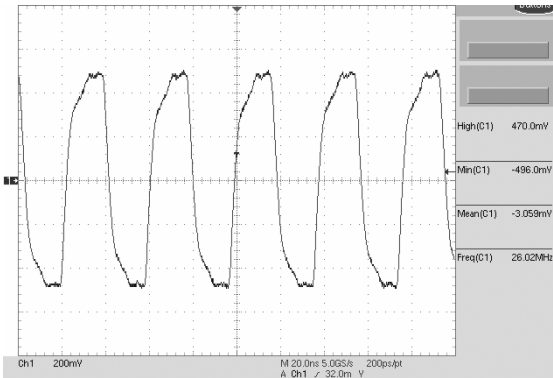
CIRCUIT



Waveform



Graph 4-1(a)



Graph 4-1(b)

(3) Checking Ant SW & Mobile SW

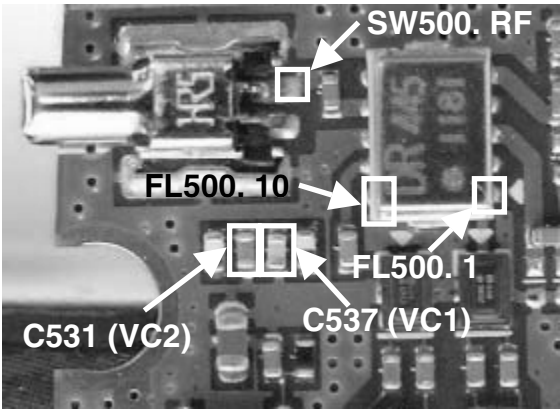
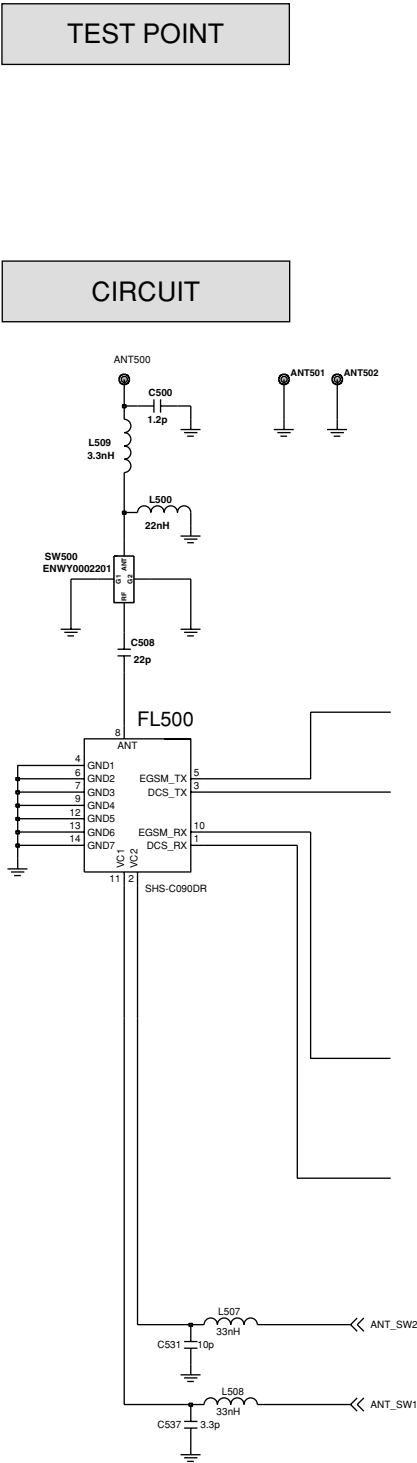
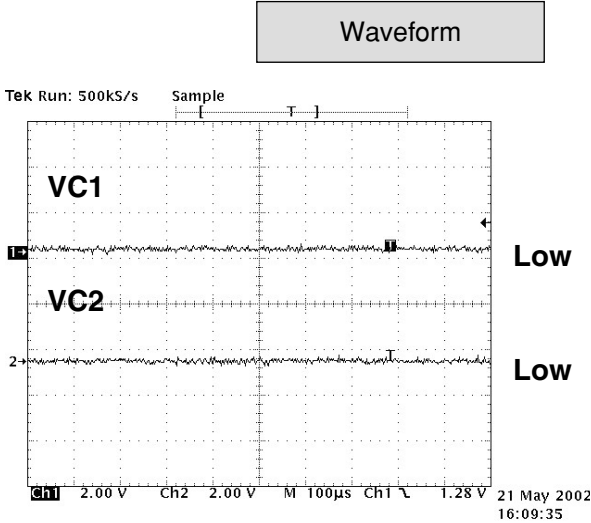


Figure 4-5



ANT SW Control GSM& DCS RX Mode

Graph 4-3

	ANT_SW1	ANT_SW2
GSM_TX	HIGH	LOW
DCS_TX	LOW	HIGH
RX	LOW	LOW

Table 4-2

4. Troubleshooting

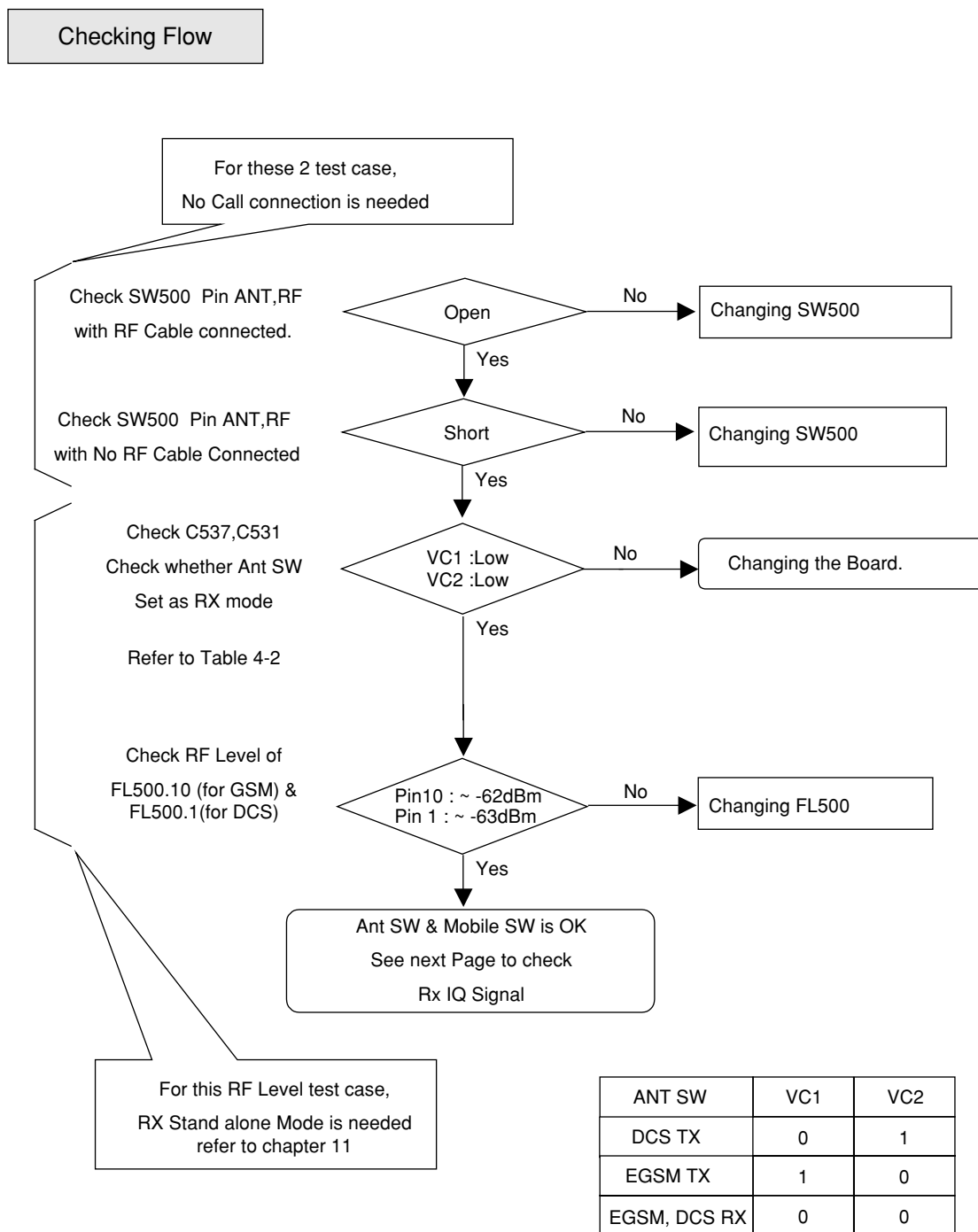


Table 4-2

(4) Checking SAW Filter Circuit

TEST POINT

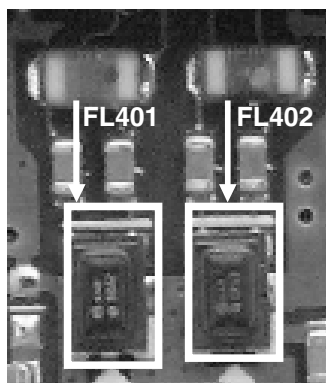
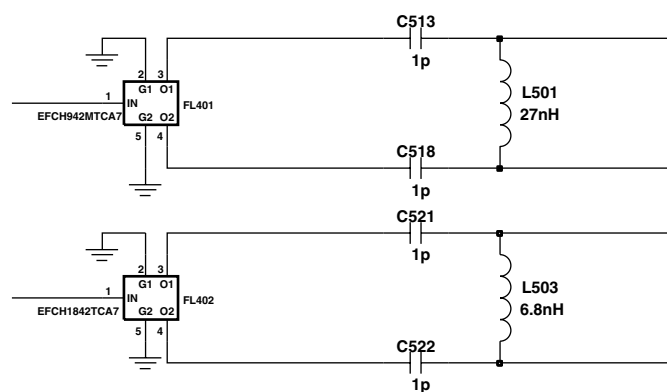
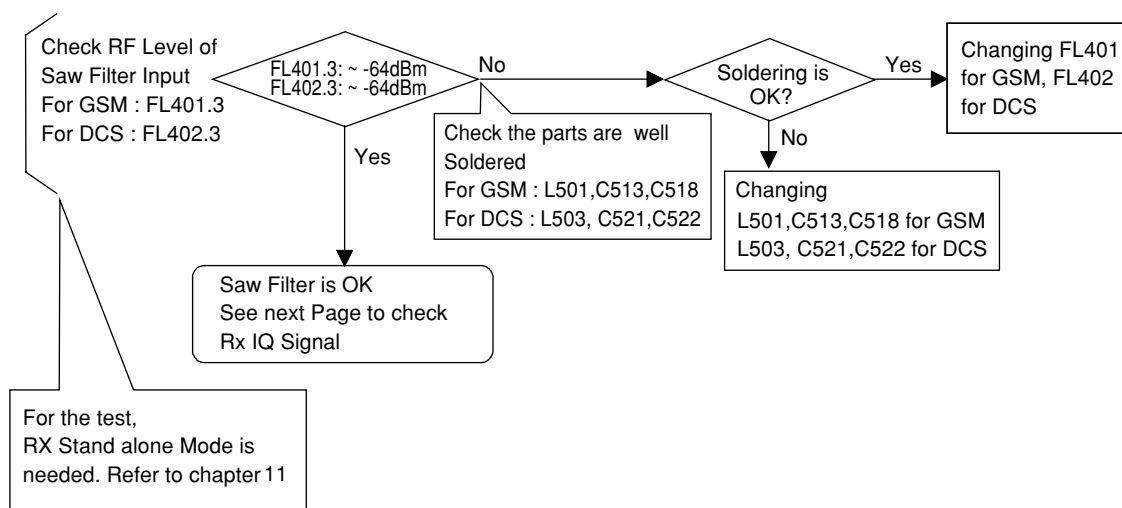


Figure 4-6

CIRCUIT



Checking Flow



4. Troubleshooting

(5) Checking RX IQ

TEST POINT

CIRCUIT

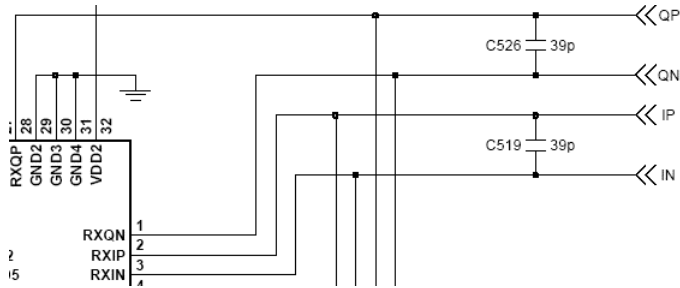
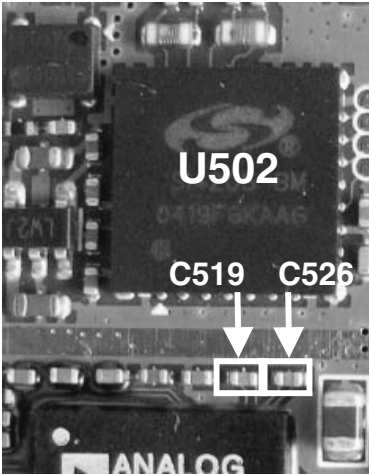
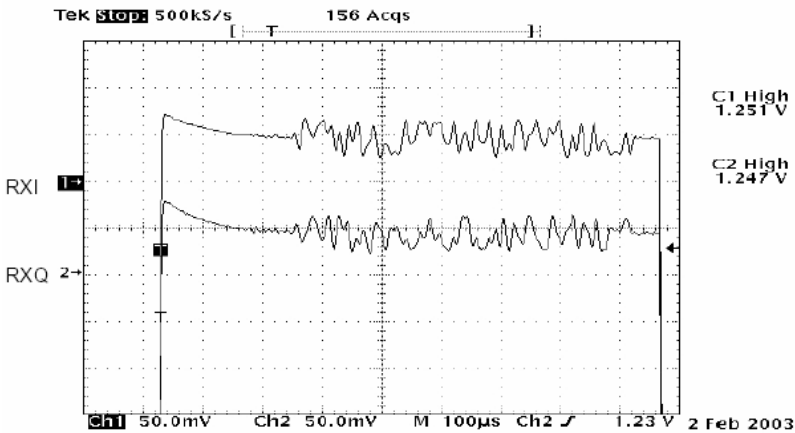


Figure 4-7

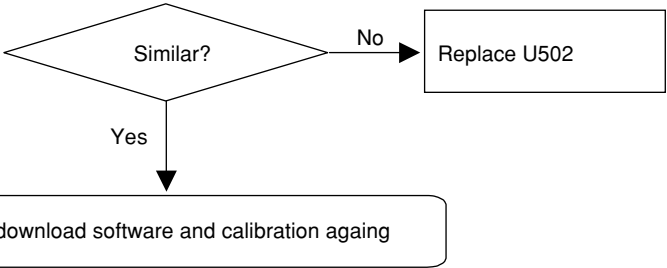
Waveform



Graph 4-4

Checking Flow

Check C519,C526.
Check if there is any
Major difference
Refer to graph 4-4



4.2 TX Trouble

TEST POINT

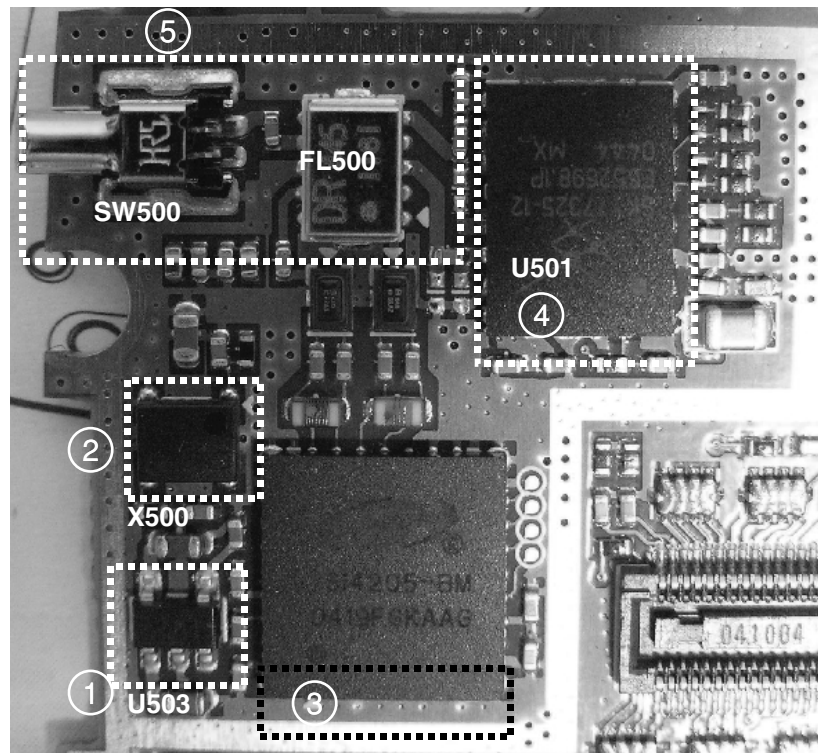
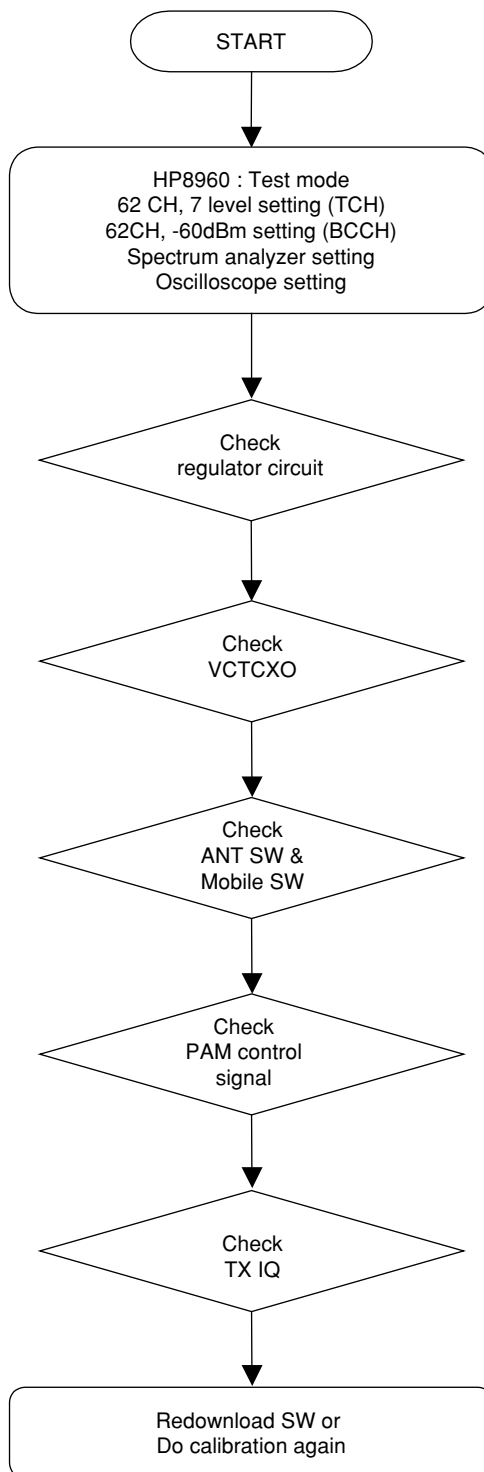


Figure 4-8

4. Troubleshooting

Checking Flow



(1) Checking Regulator Circuit

TEST POINT

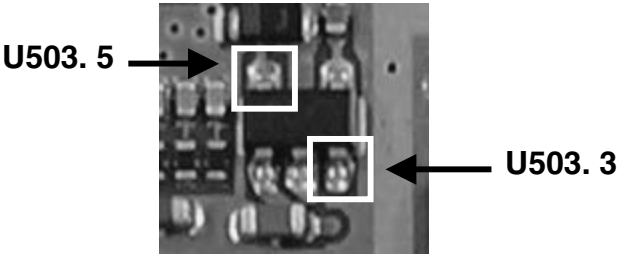
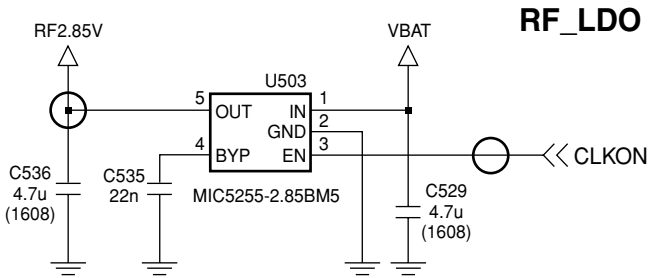
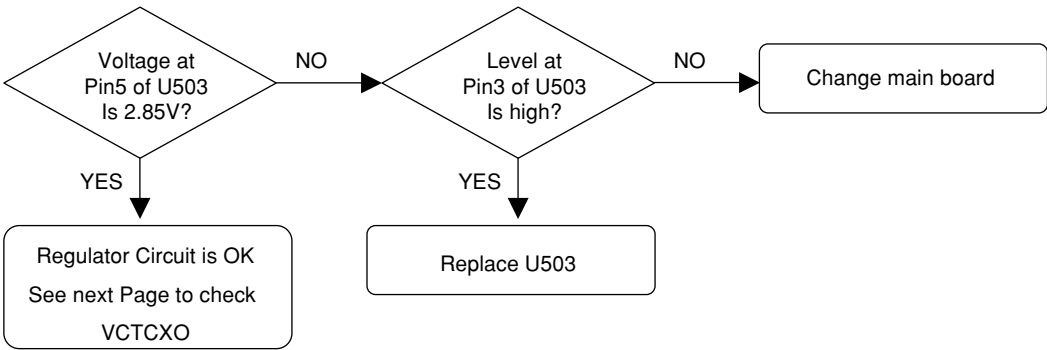


Figure 4-2

CIRCUIT



Checking Flow



4. Troubleshooting

(2) Checking VCTCXO Circuit

TEST POINT

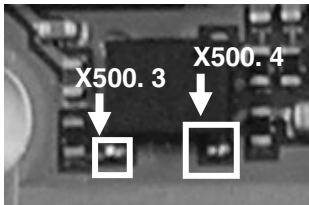
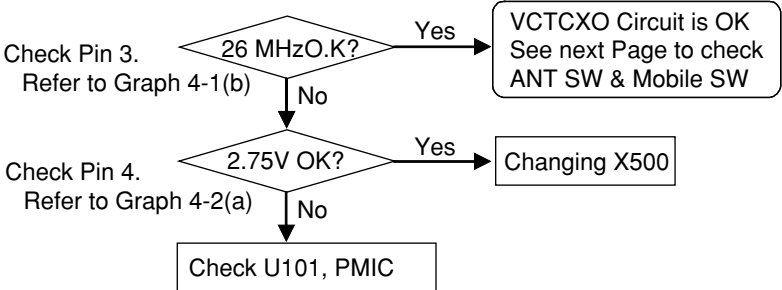
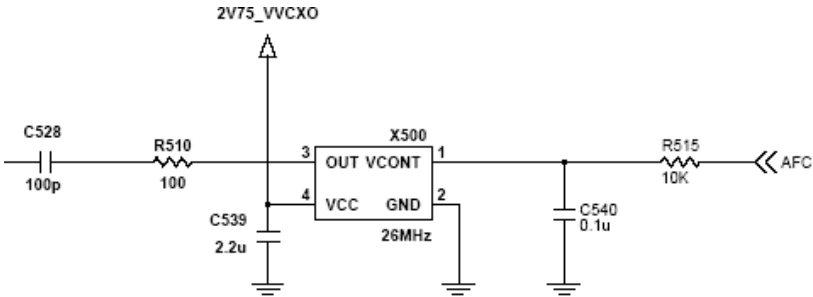


Figure 4-3

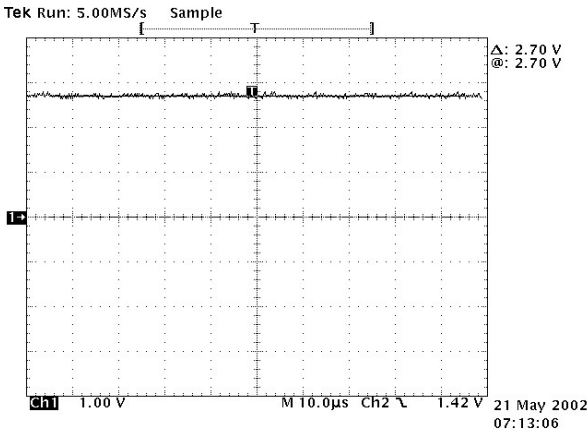
Checking Flow



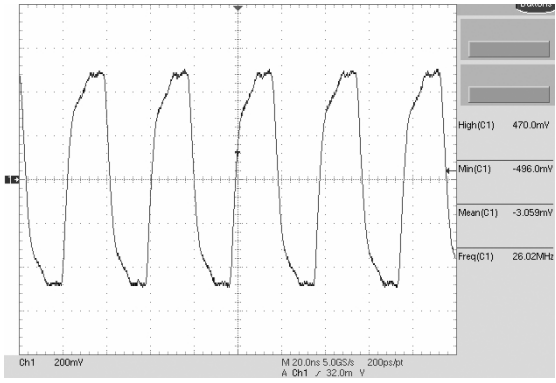
CIRCUIT



Waveform



Graph 4-1(a)



Graph 4-1(b)

(3) Checking Ant SW & Mobile SW

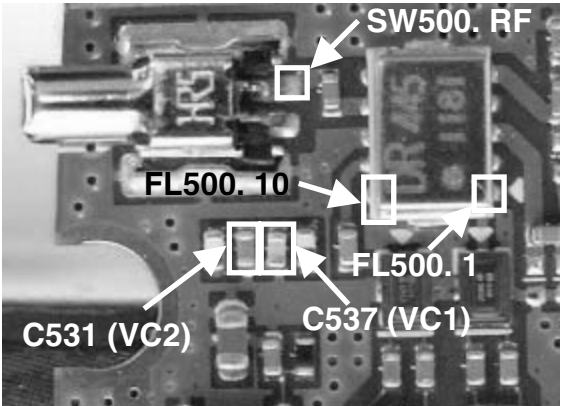
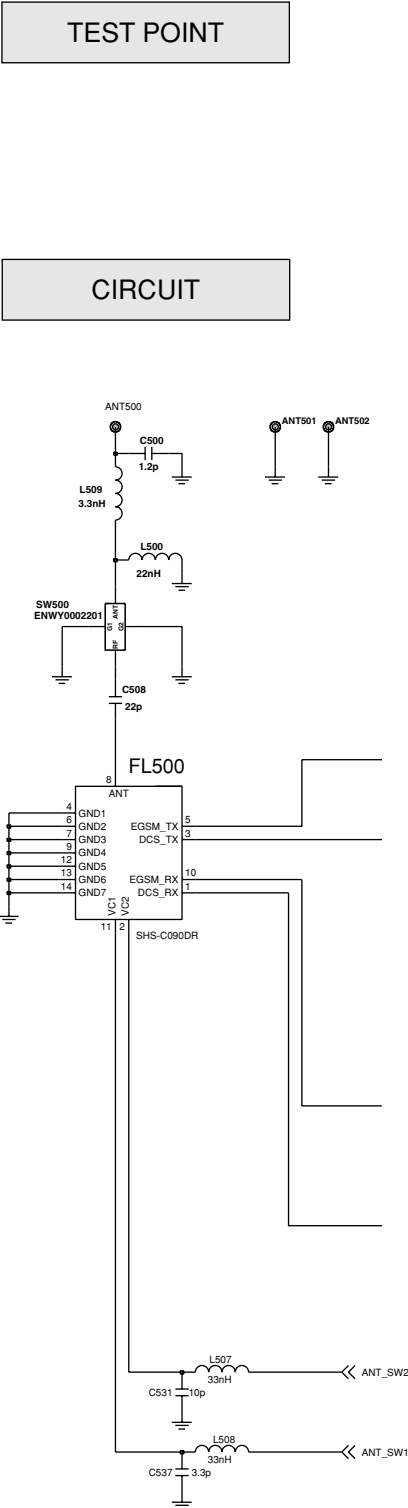
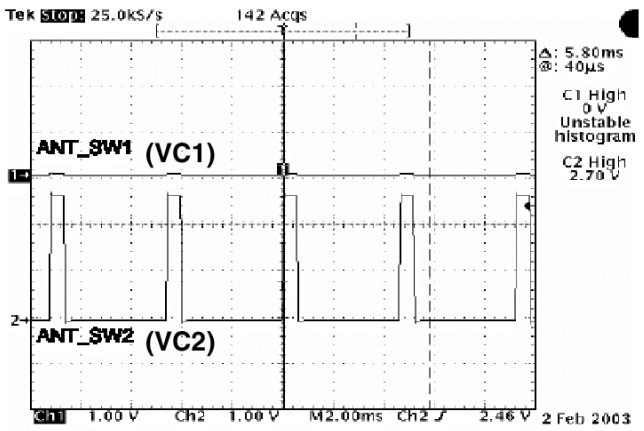
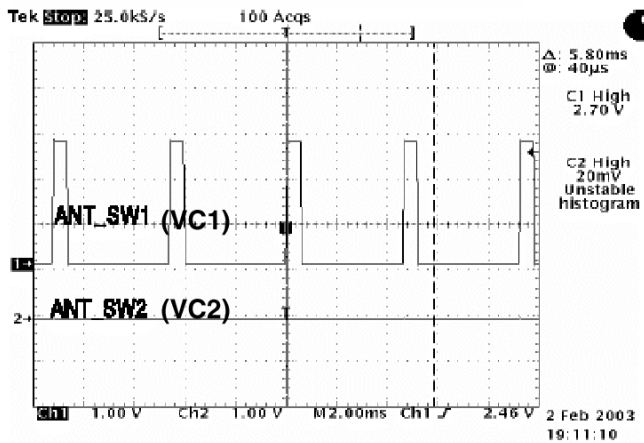


Figure 4-5

Waveform



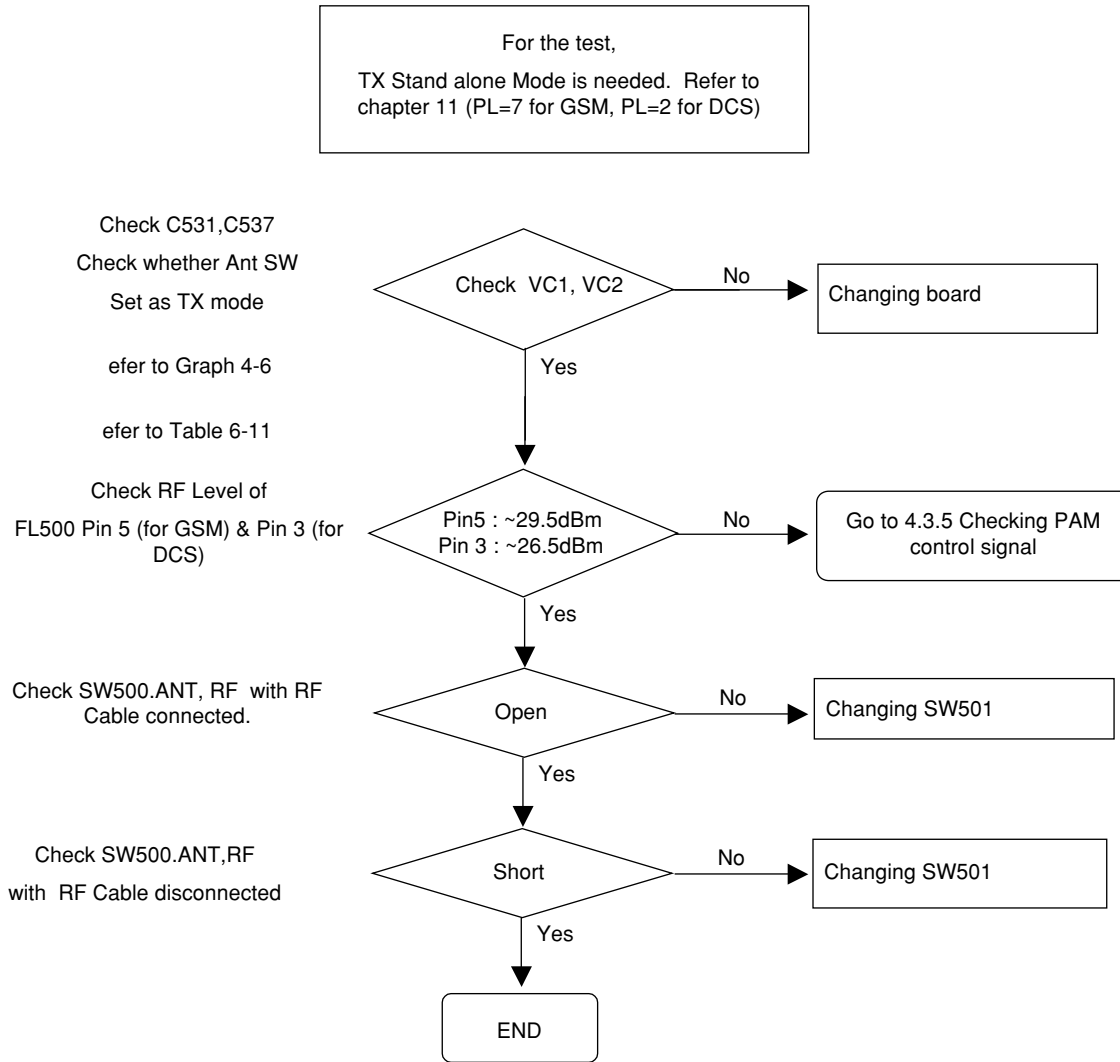
Graph 4-6(a)



Graph 4-6(b)

4. Troubleshooting

Checking Flow

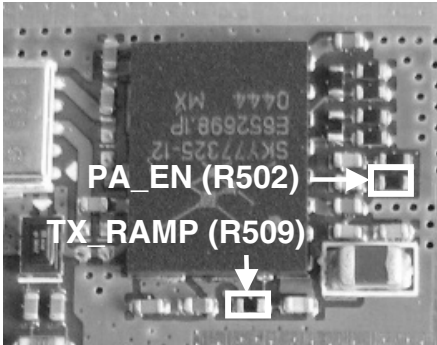


ANT SW	VC1	VC2
DCS TX	0	1
EGSM TX	1	0
EGSM, DCS RX	0	0

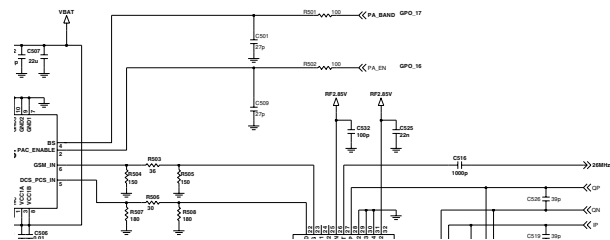
Table 4-3

(4) Checking PAM Control Signal

TEST POINT



Checking Flow



(5) Checking TX IQ

TEST POINT

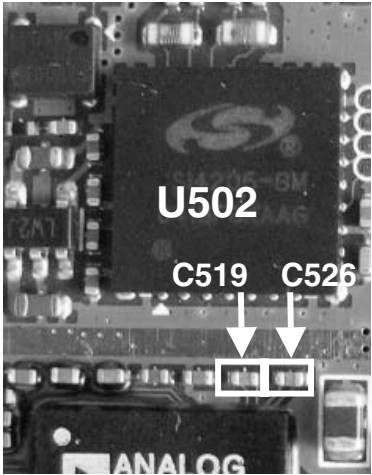
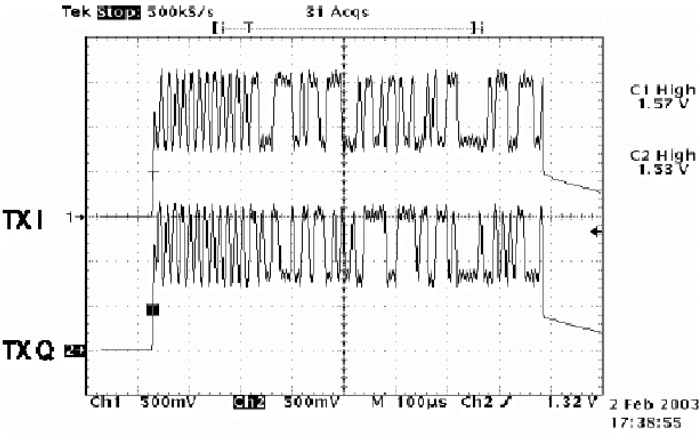


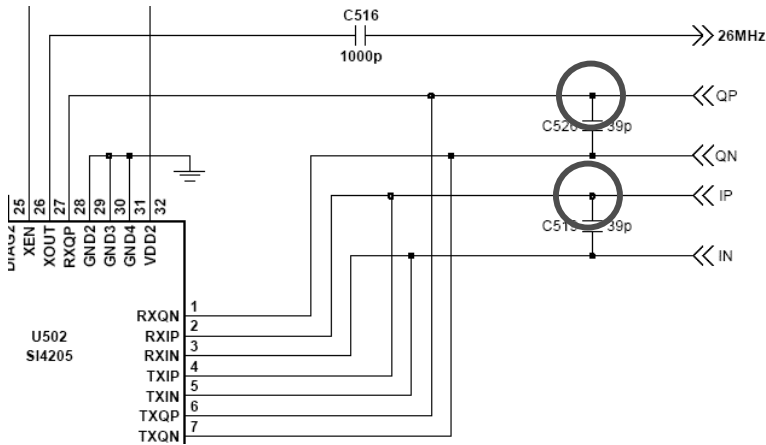
Figure 4-13

Waveform

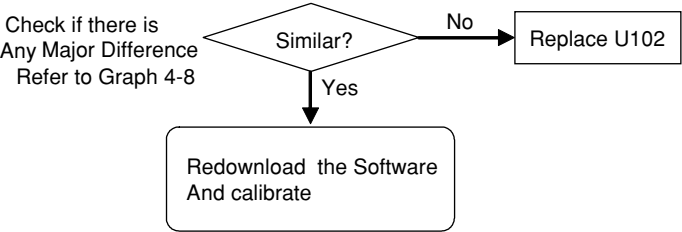


Graph 4-8

CIRCUIT

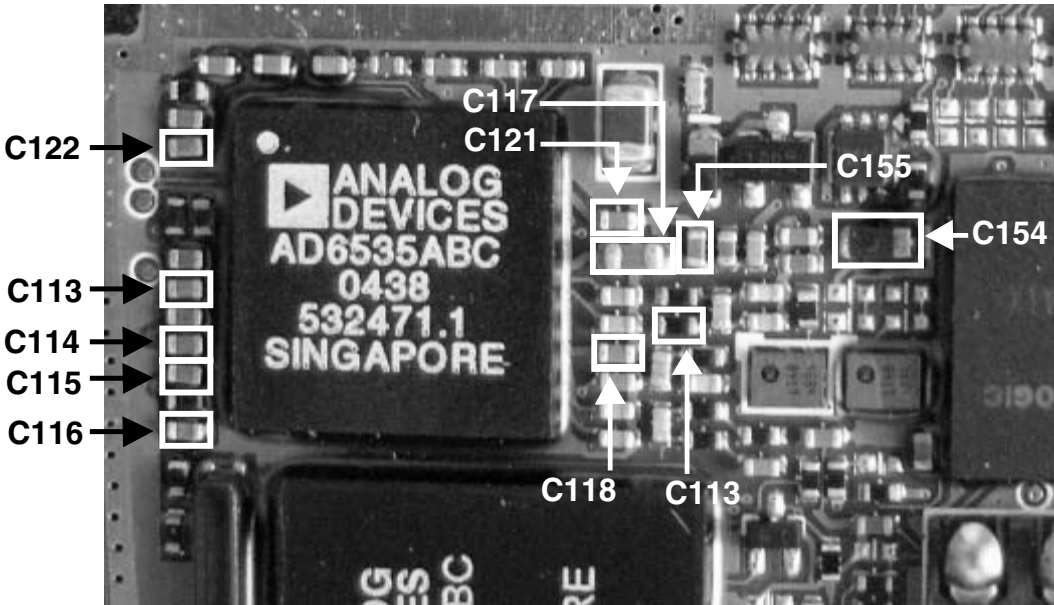


Checking Flow

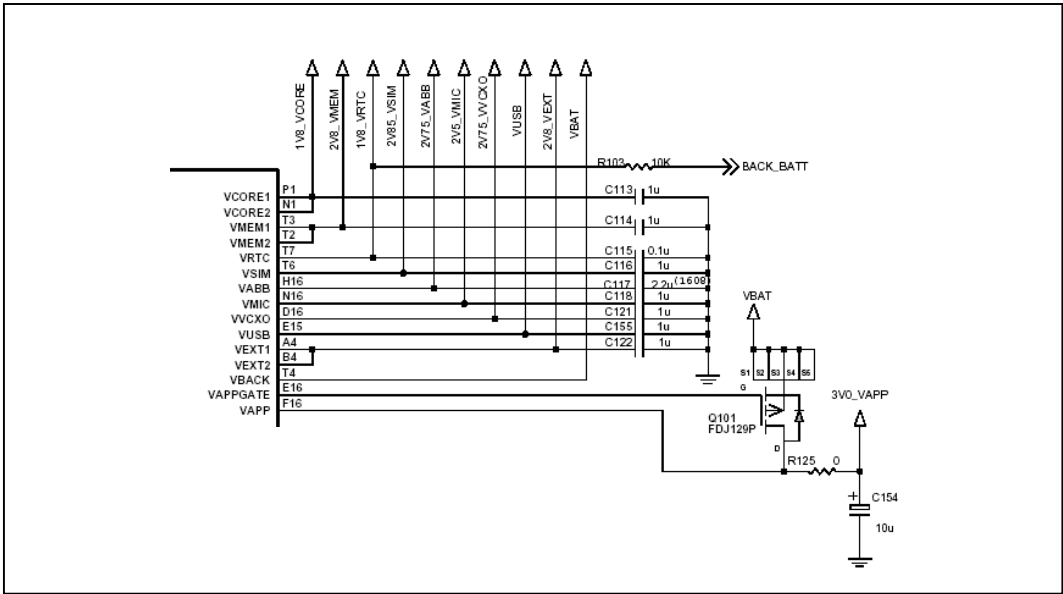


4.3 Power On Trouble

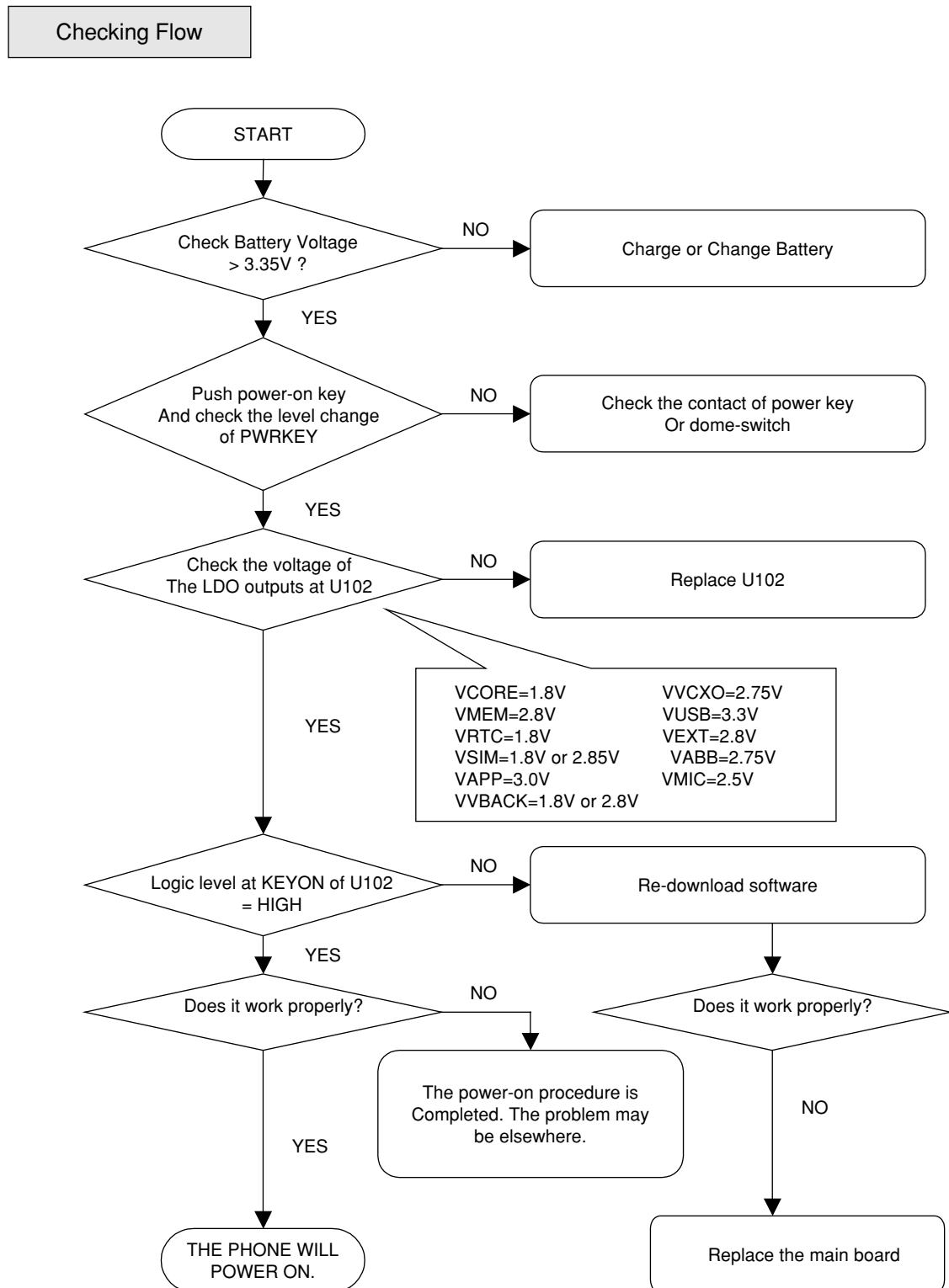
TEST POINT



CIRCUIT

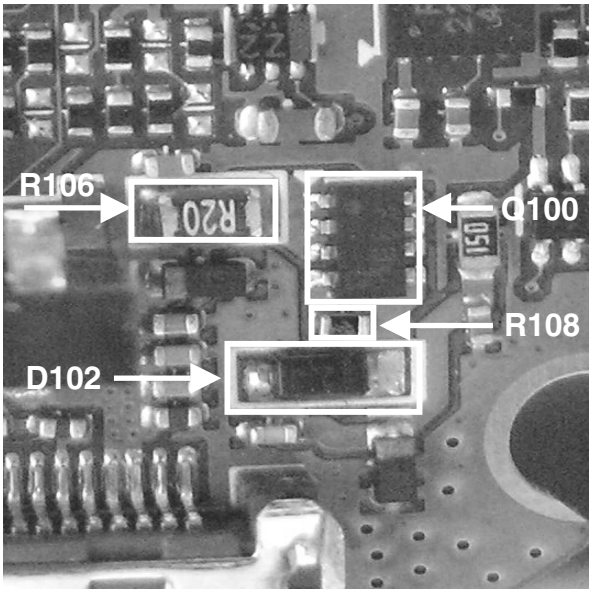


4. Troubleshooting

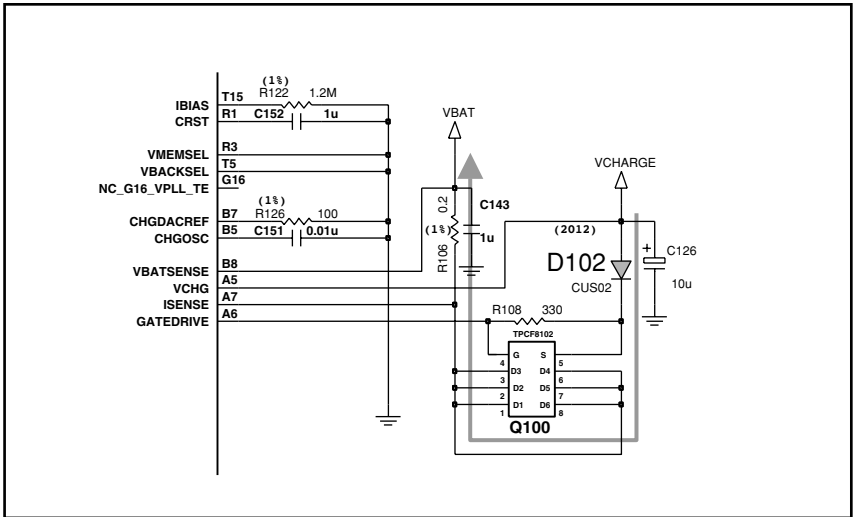


4.4 Charging Trouble

TEST POINT

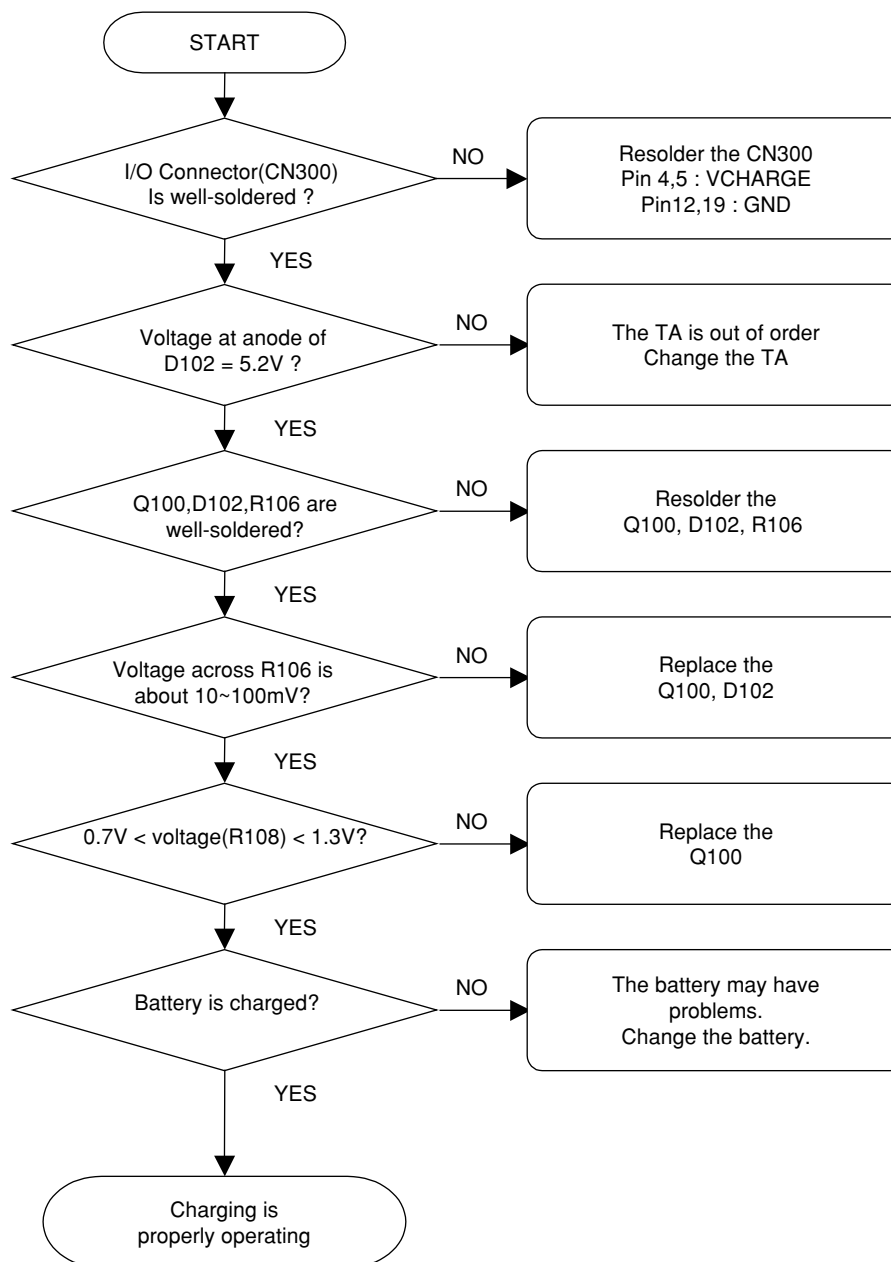


CIRCUIT



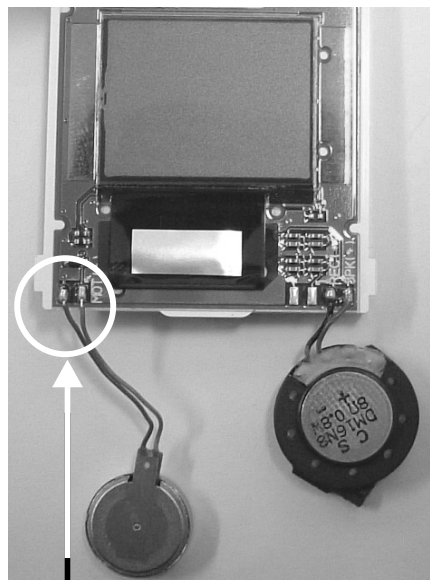
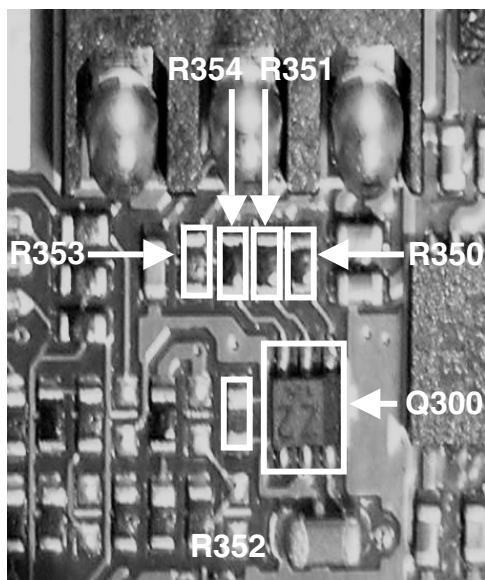
4. Troubleshooting

Checking Flow



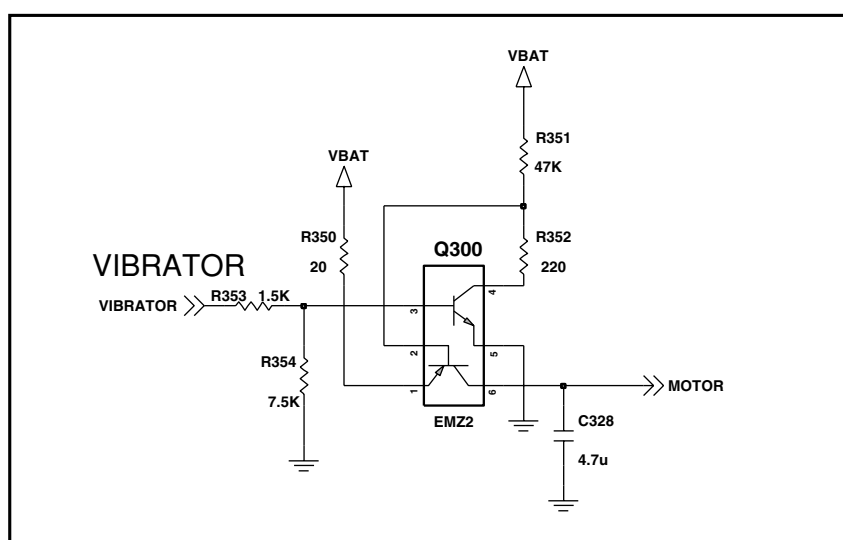
4.5 Vibrator Trouble

TEST POINT



Soldering Check in LCD Module

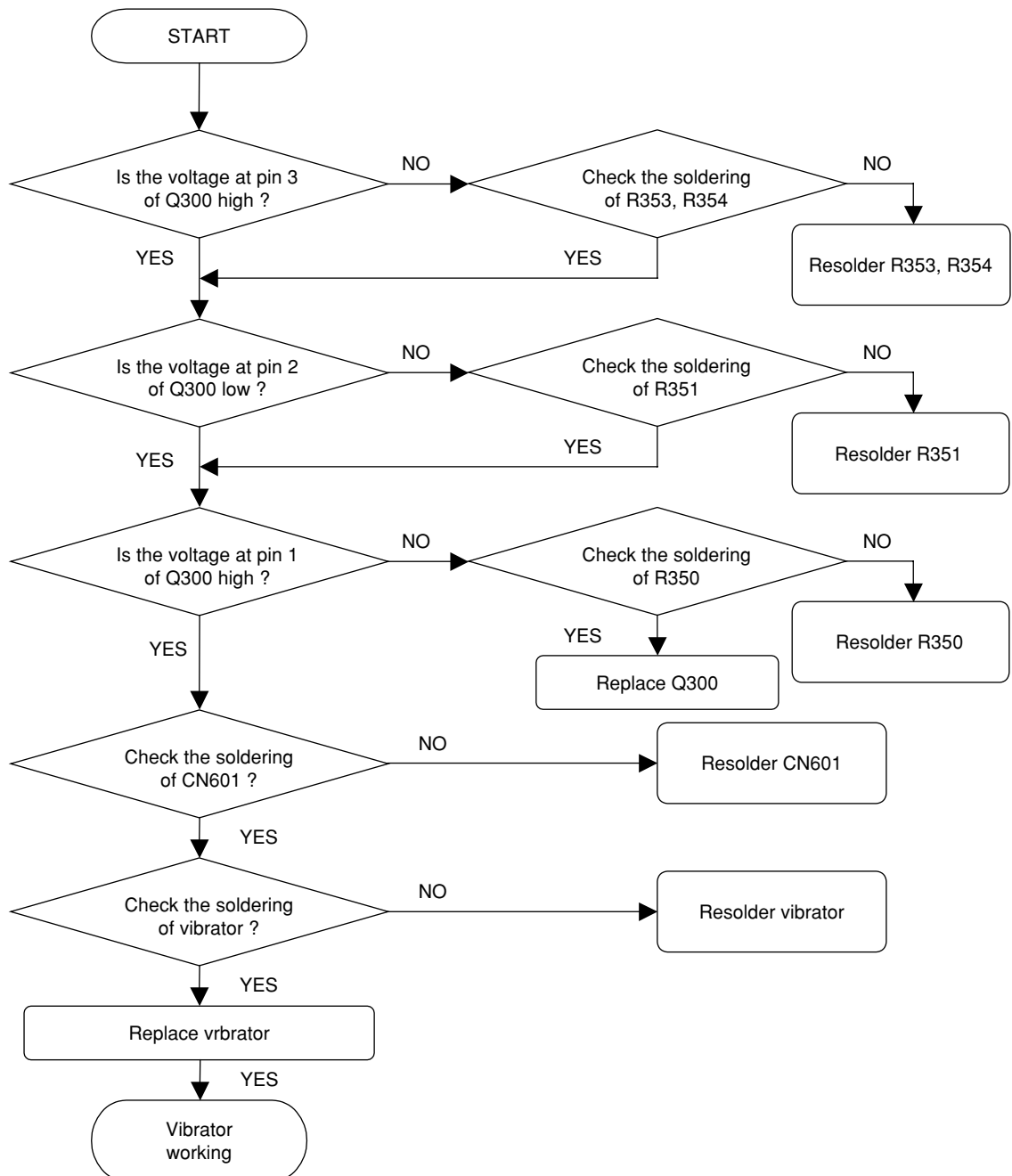
CIRCUIT



4. Troubleshooting

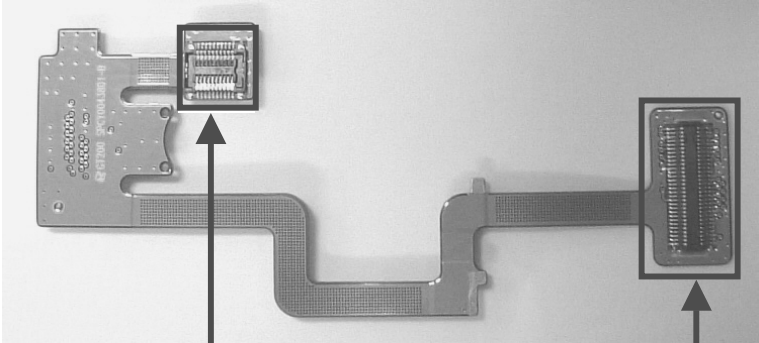
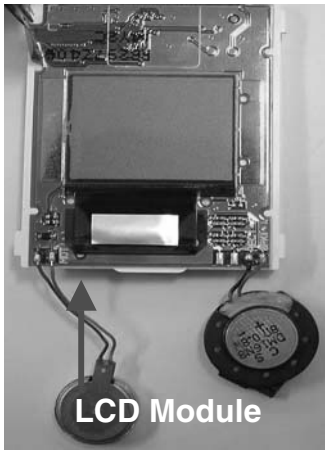
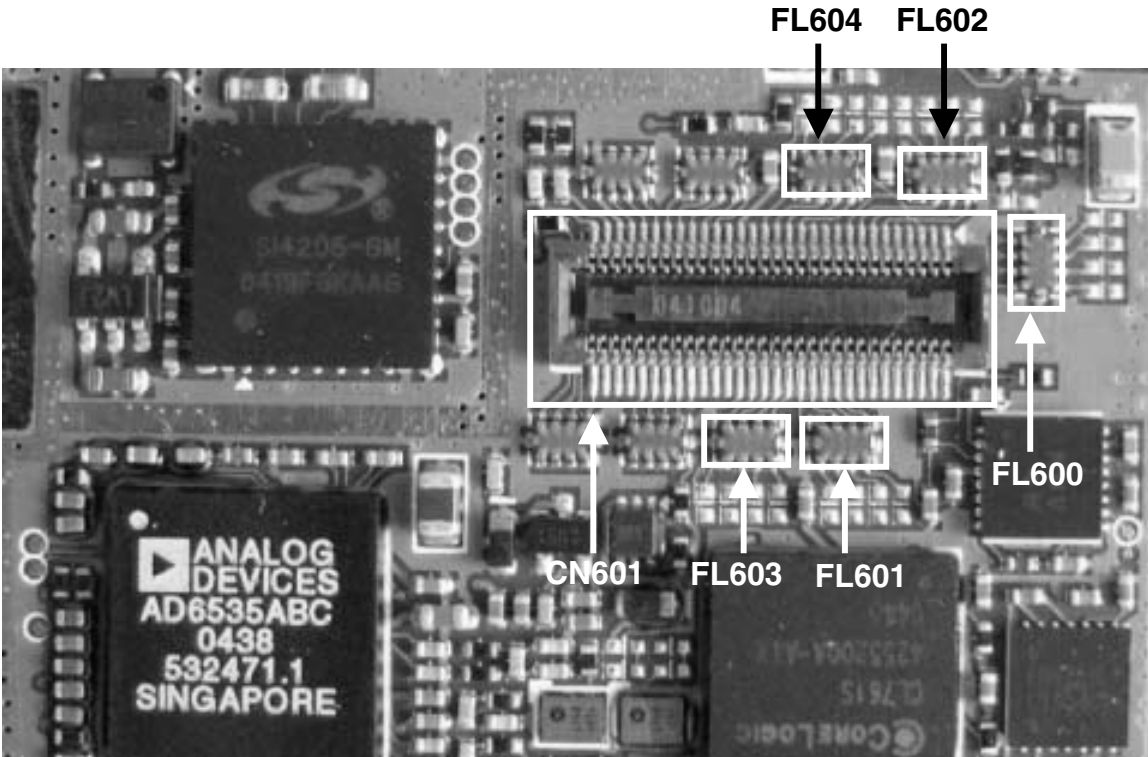
Checking Flow

SETTING : Enter the engineering mode, and set vibrator on at vibration of BB test menu



4.6 LCD Trouble

TEST POINT

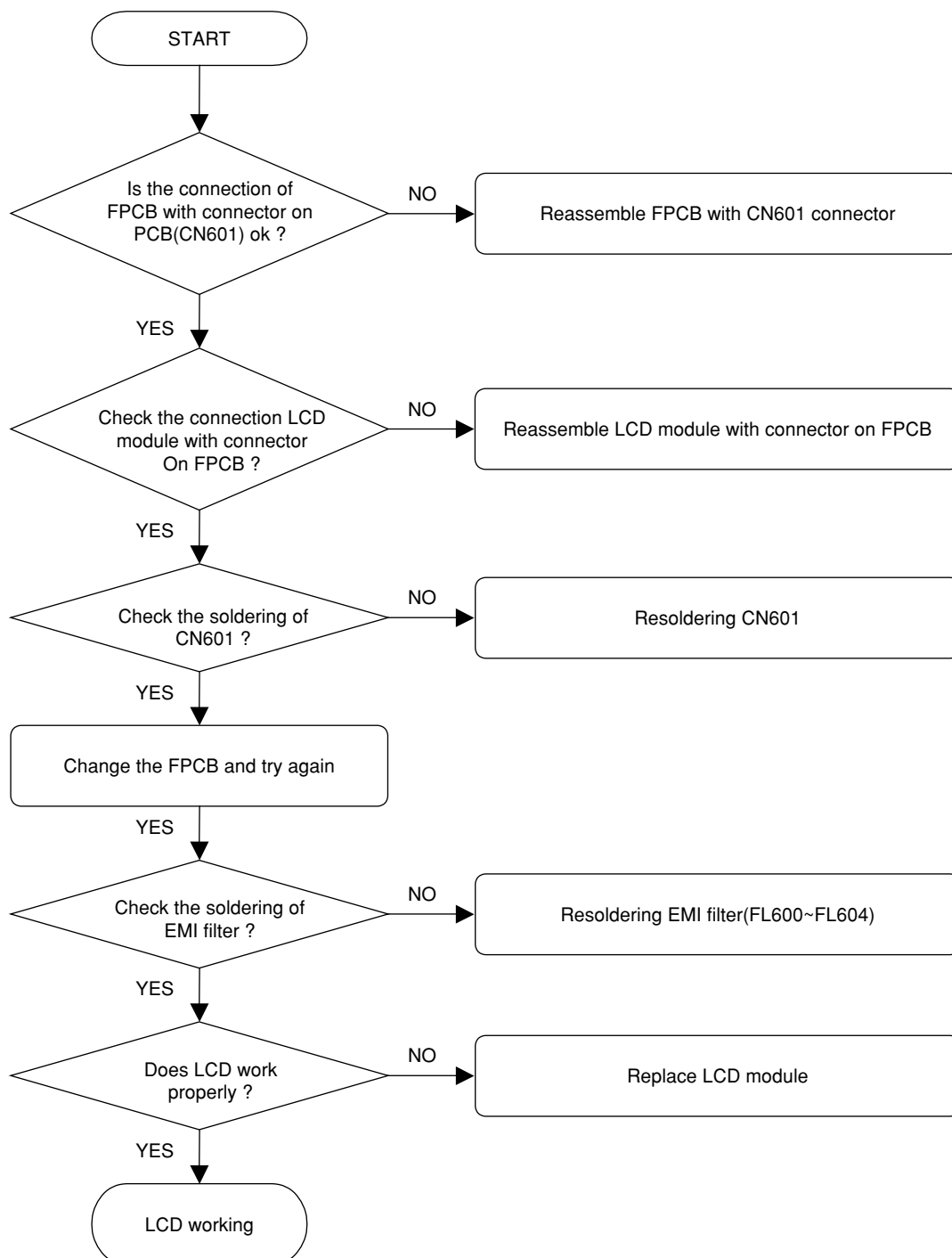


Camera Module connection Connector (20Pin, female)

LCD Module connection connector(40Pin, male)

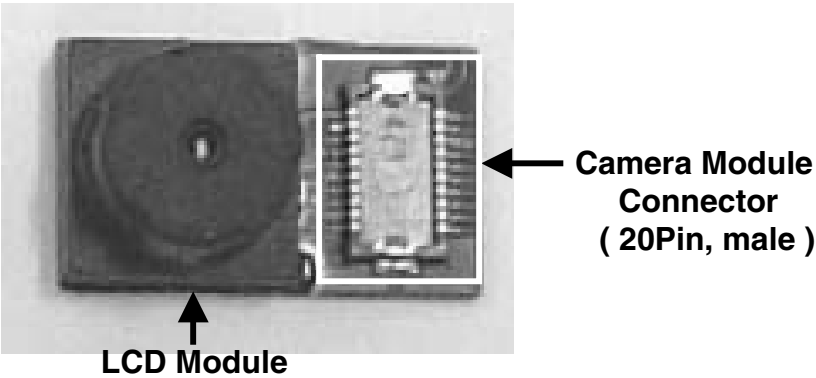
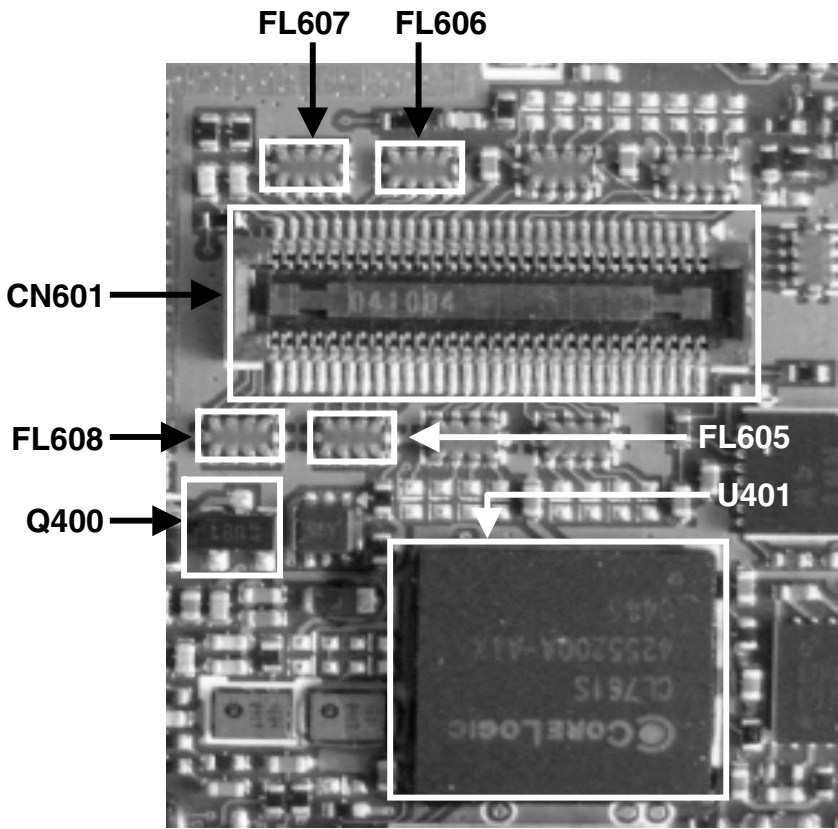
4. Troubleshooting

Checking Flow

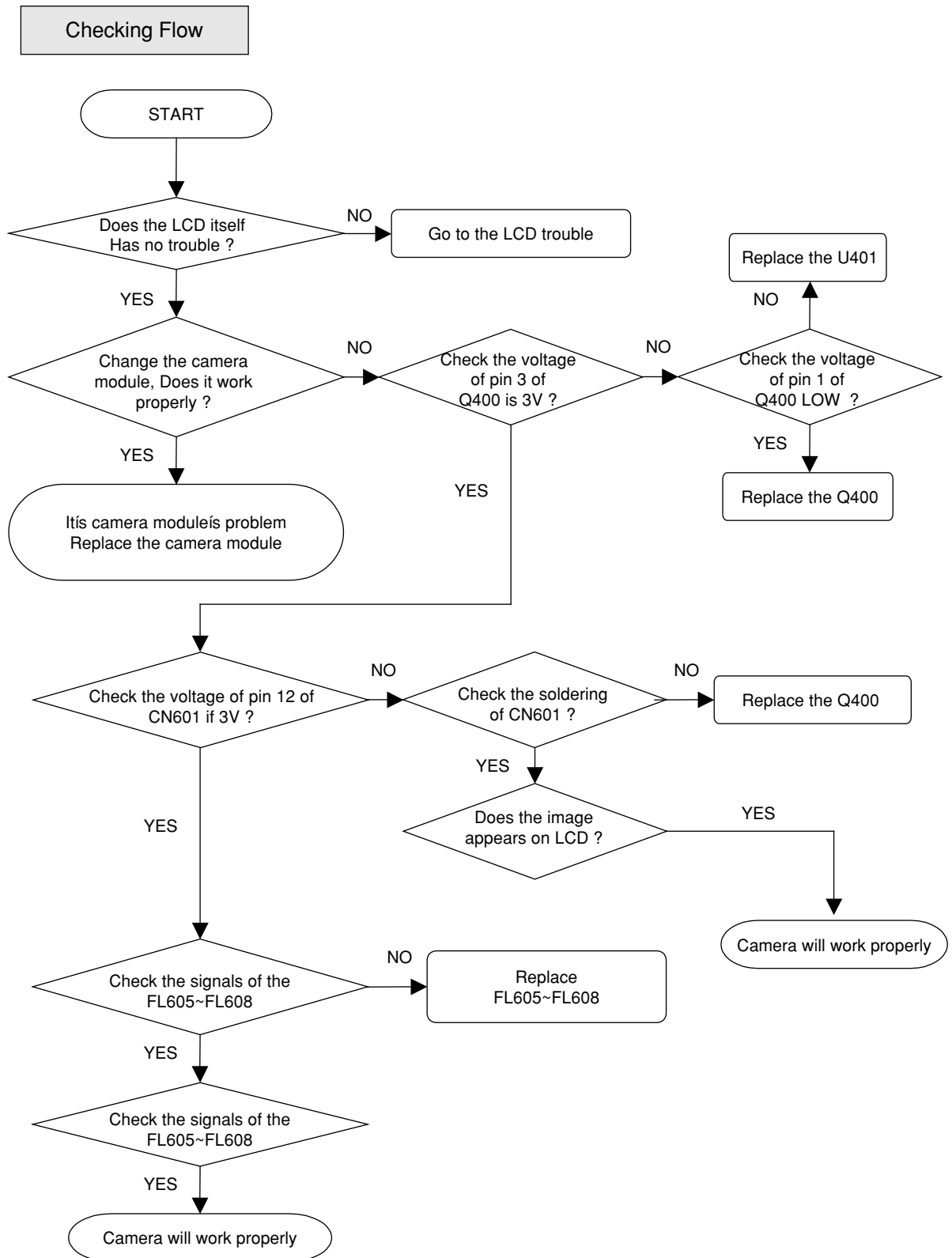


4.7 Camera Trouble

TEST POINT

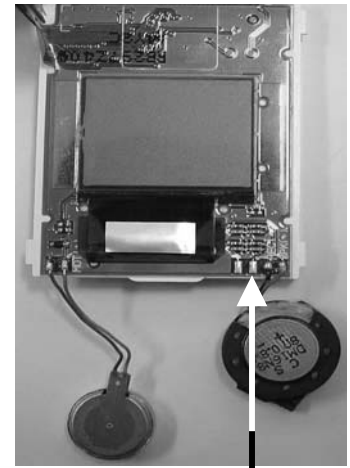
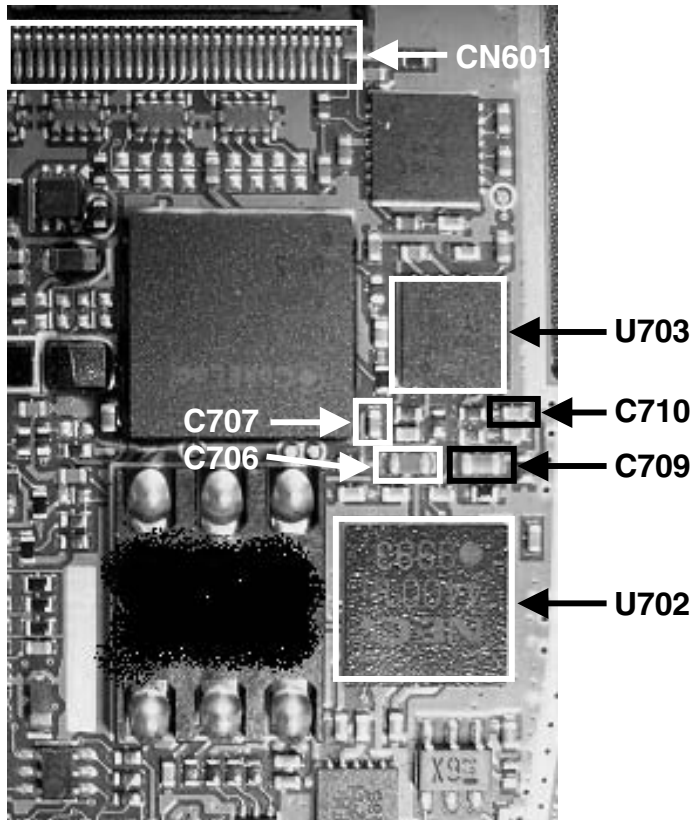


4. Troubleshooting



4.8 Speaker Trouble

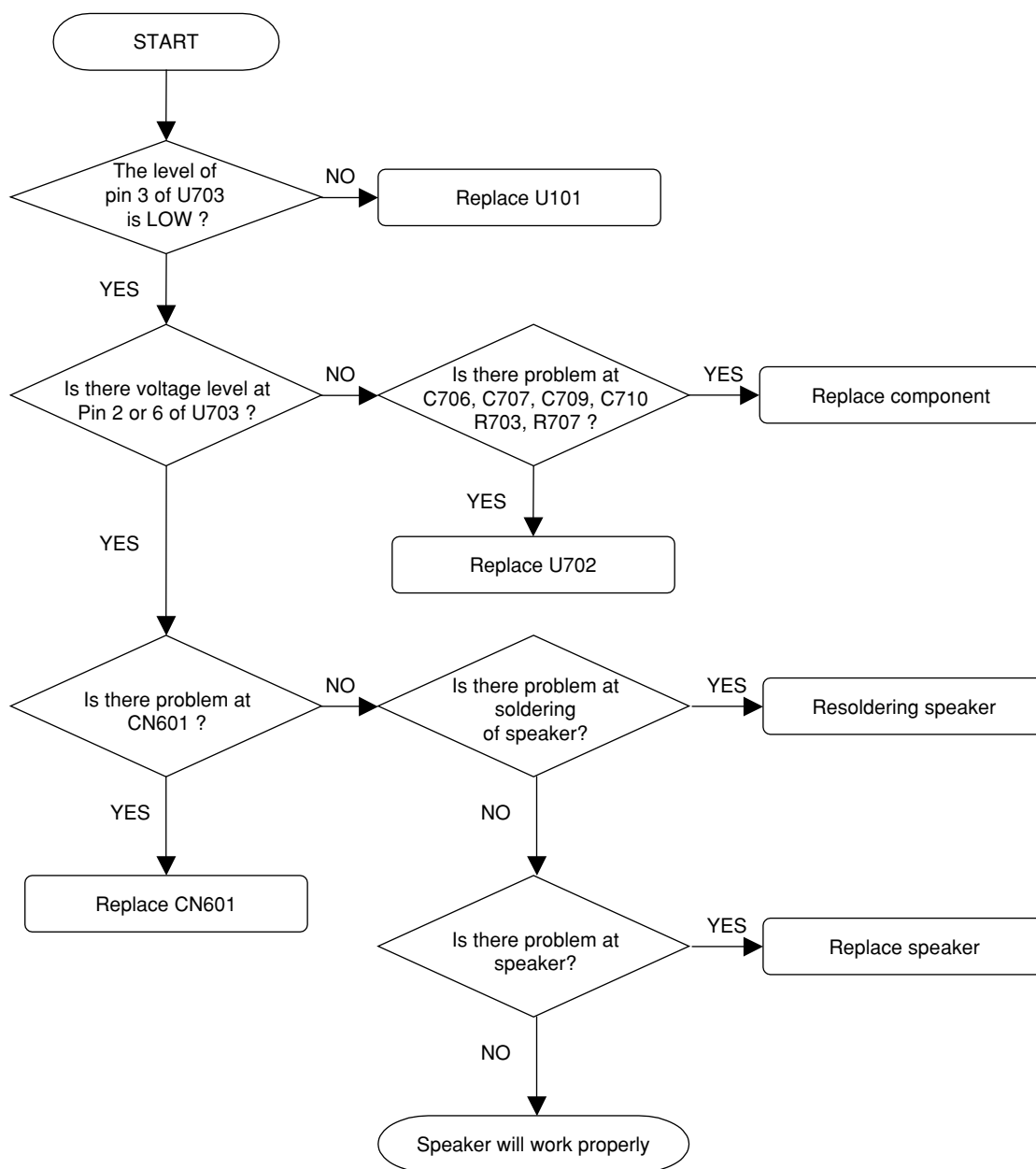
TEST POINT



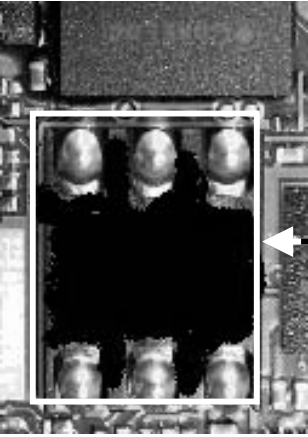
Soldering Check

4. Troubleshooting

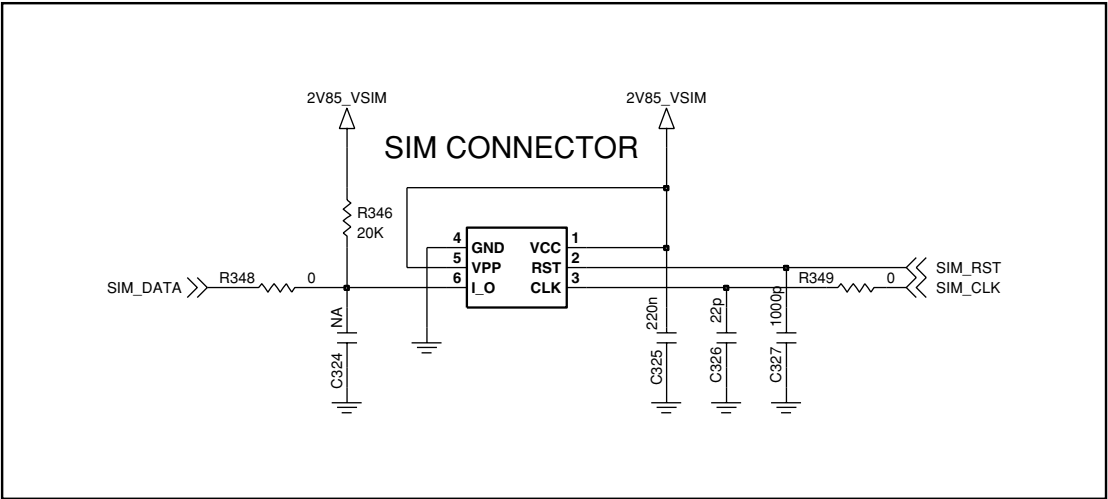
Checking Flow



TEST POINT

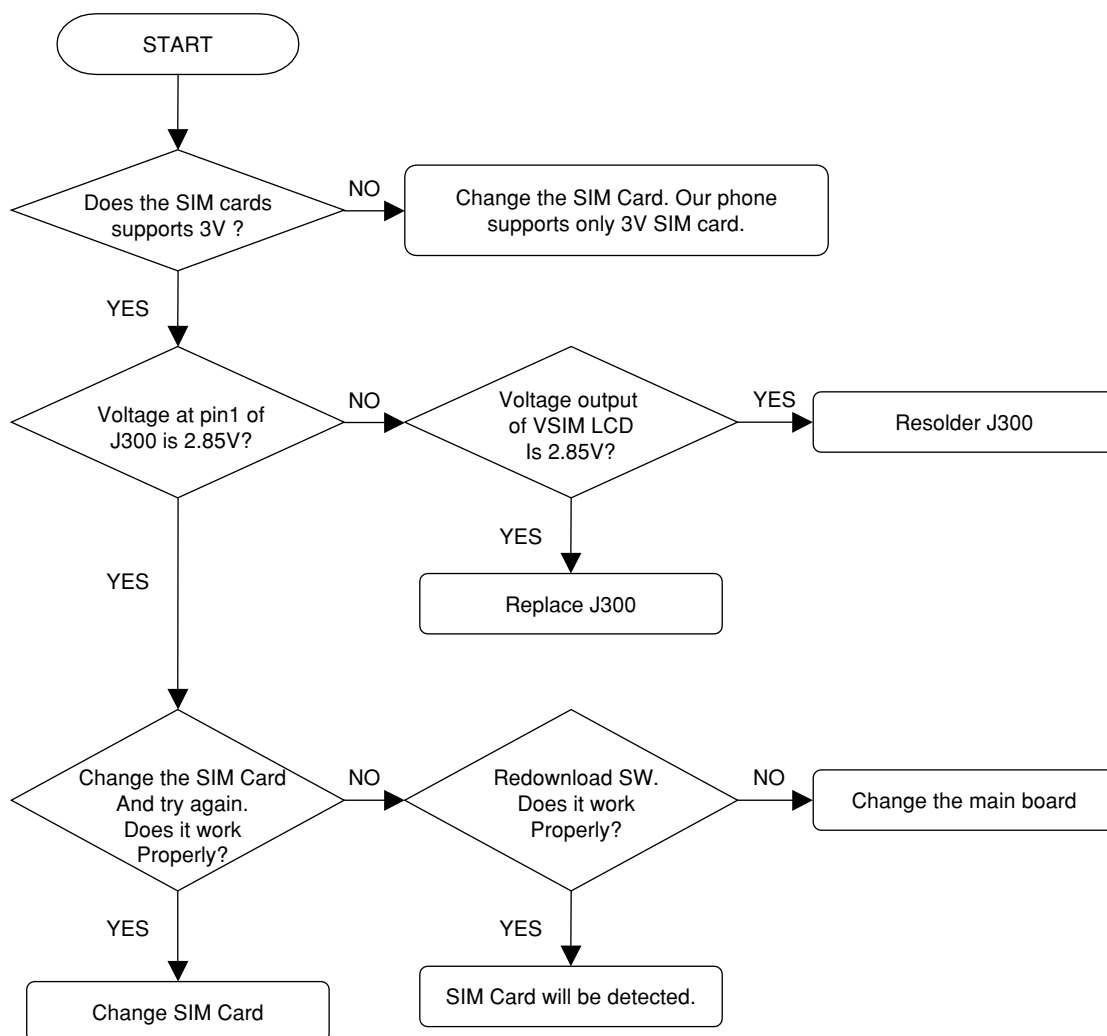


CIRCUIT DIAGRAM



4. Troubleshooting

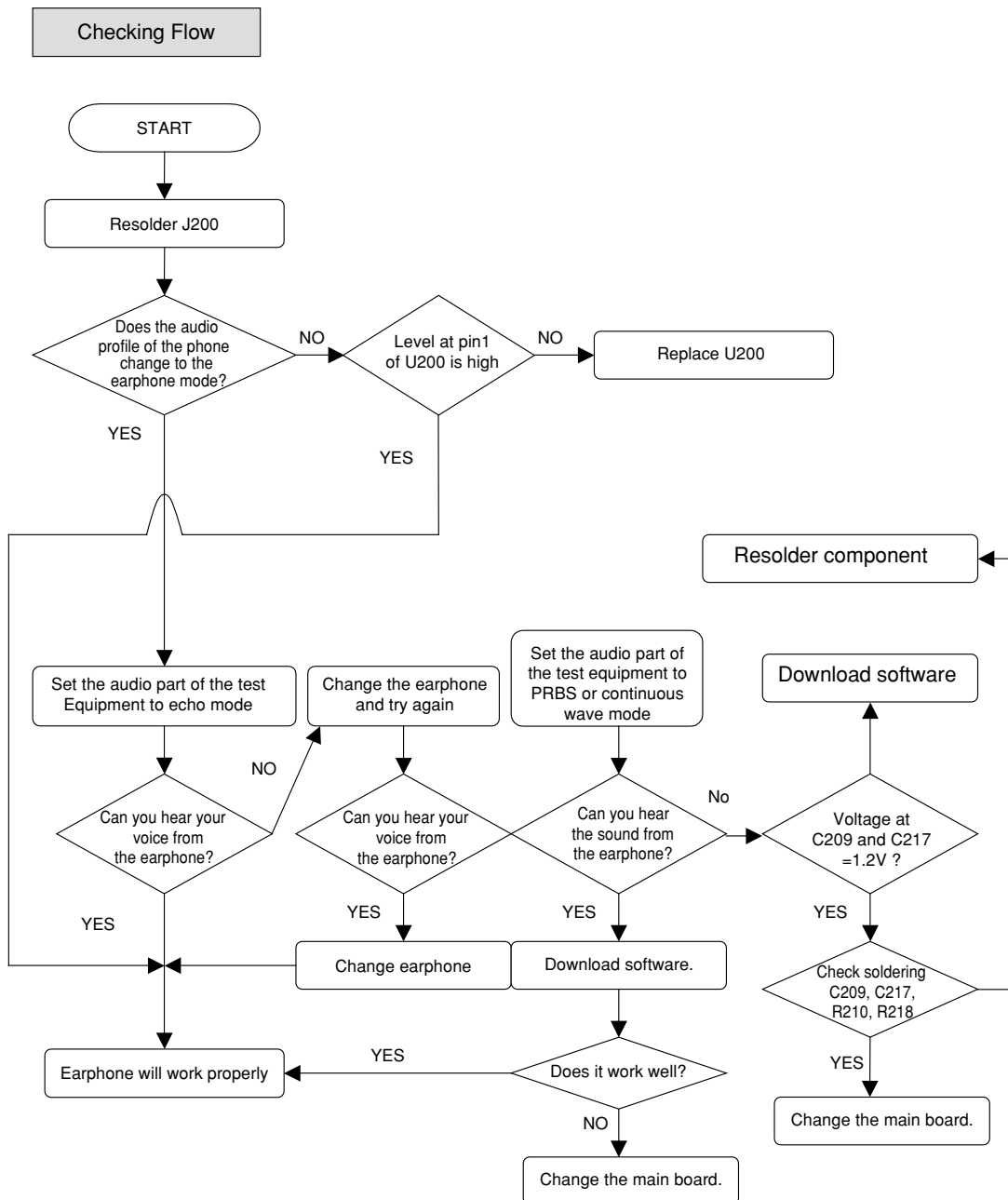
Checking Flow



TEST POINT

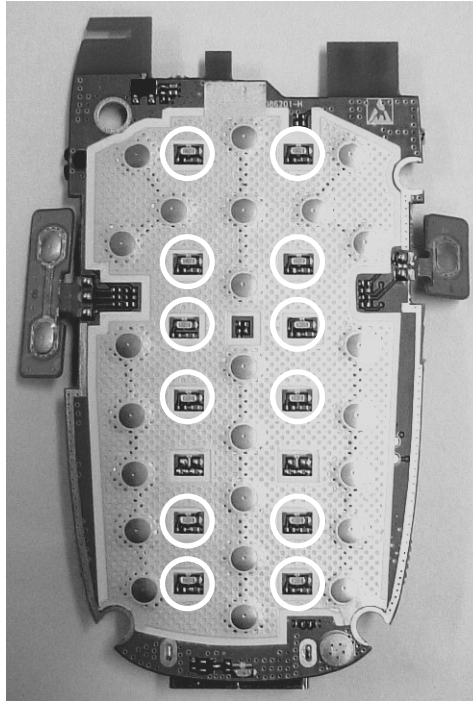
CIRCUIT DIAGRAM

4. Troubleshooting



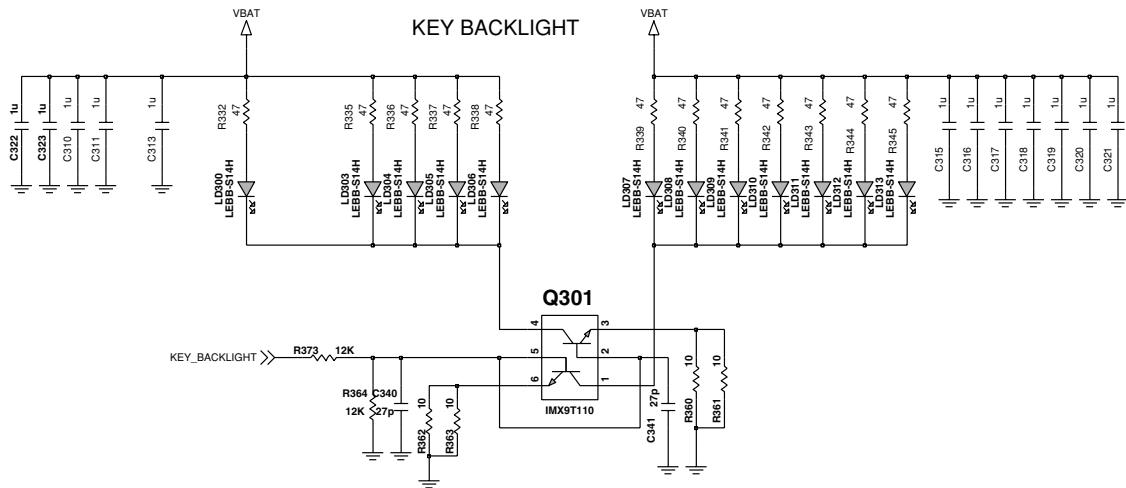
4.11 KEY backlight Trouble

.TEST POINT

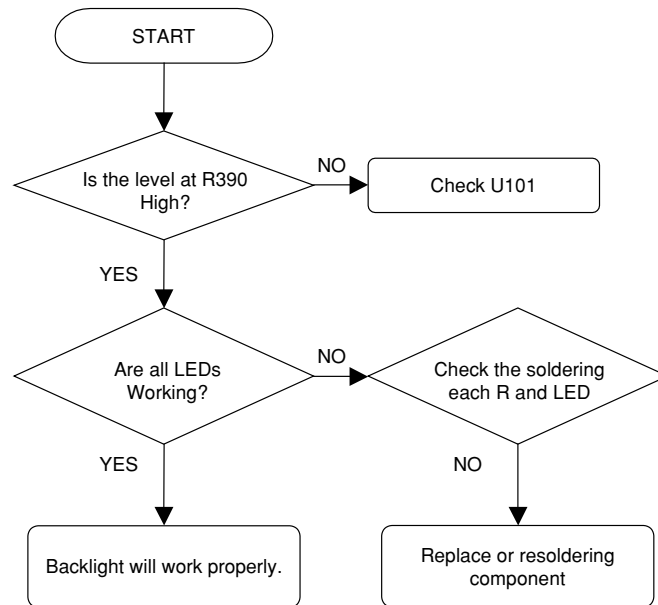


4. Troubleshooting

CIRCUIT DIAGRAM

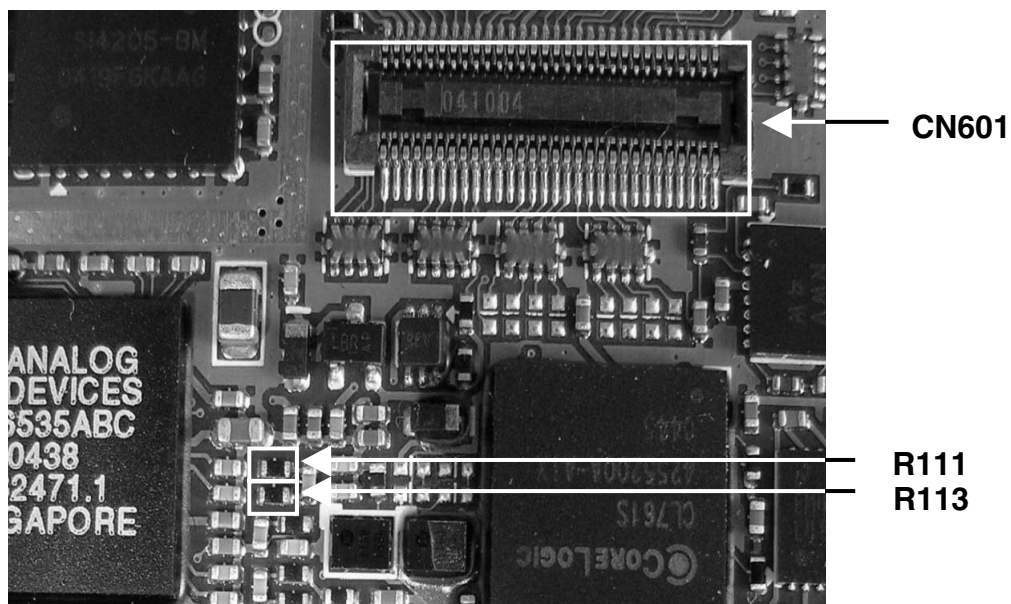


Checking Flow

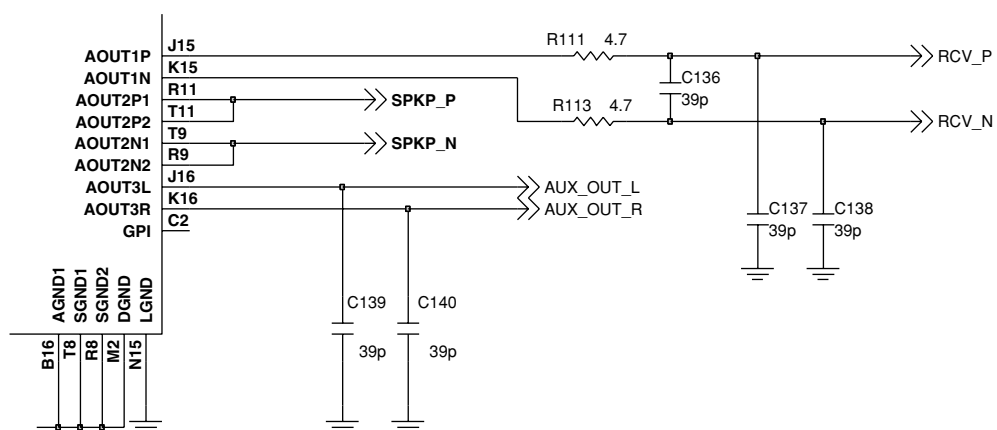


4.12 Receiver Trouble

TEST POINT



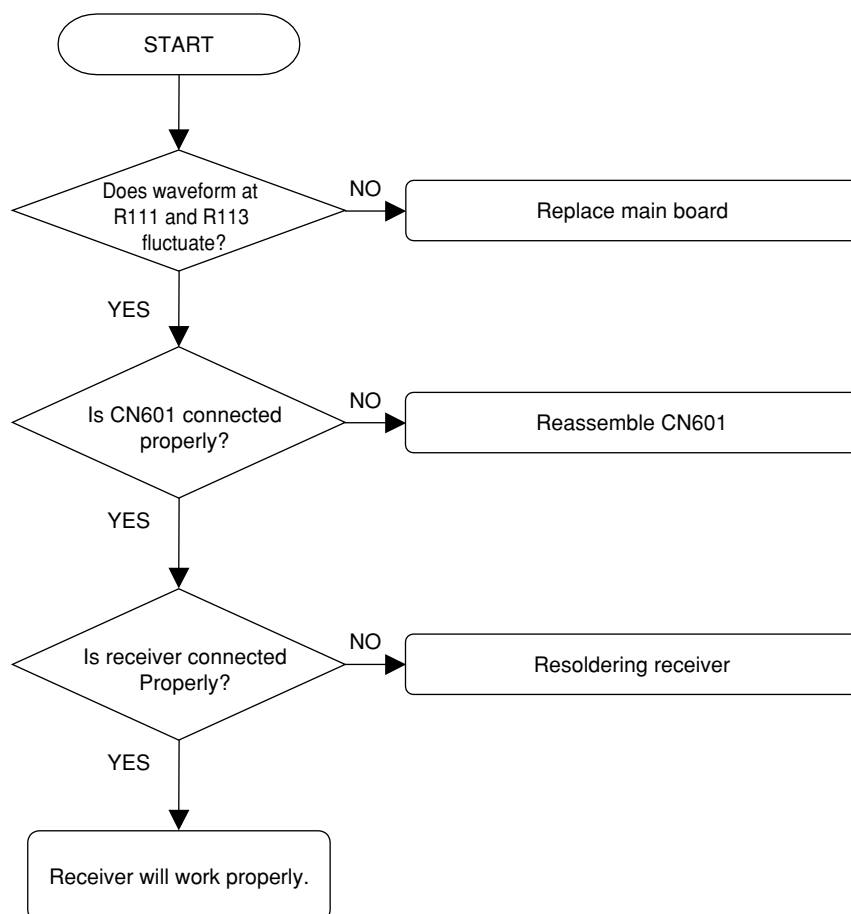
CIRCUIT DIAGRAM



4. Troubleshooting

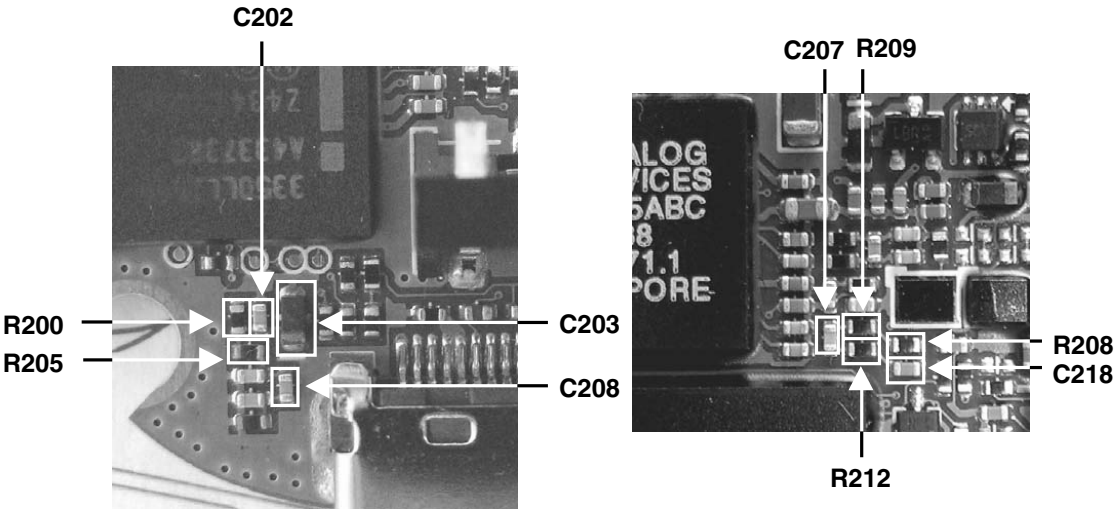
Checking Flow

SETTING : After initialize Agilent 8960, Test EGSM, DCS mode
Set the property of audio as PRBS or continuous wave. Set the receiving volume of mobile as Max.

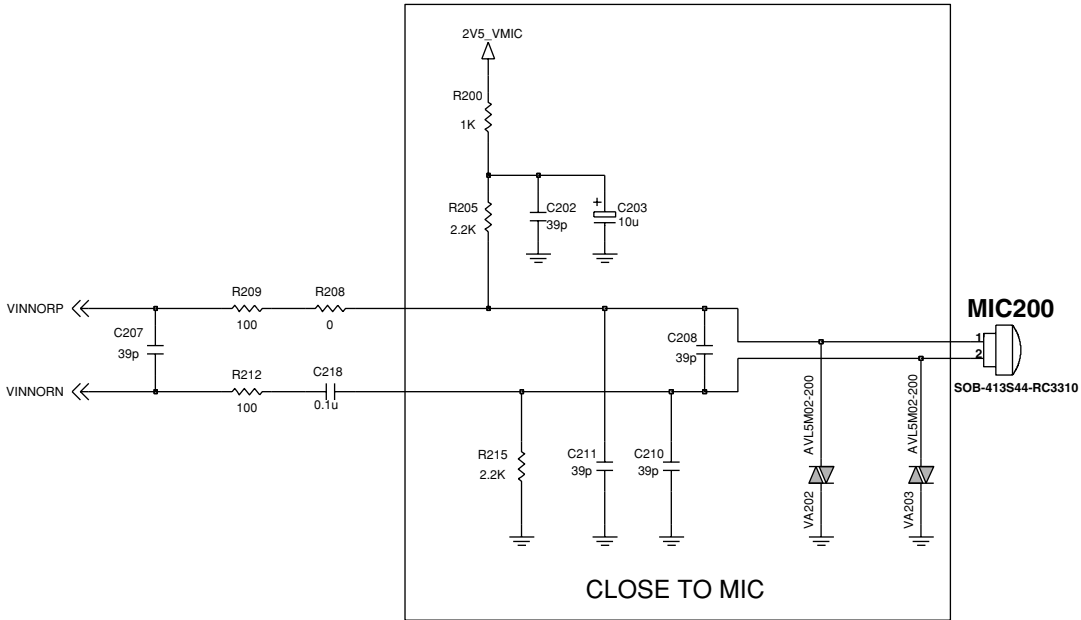


4.13 Microphone Trouble

TEST POINT



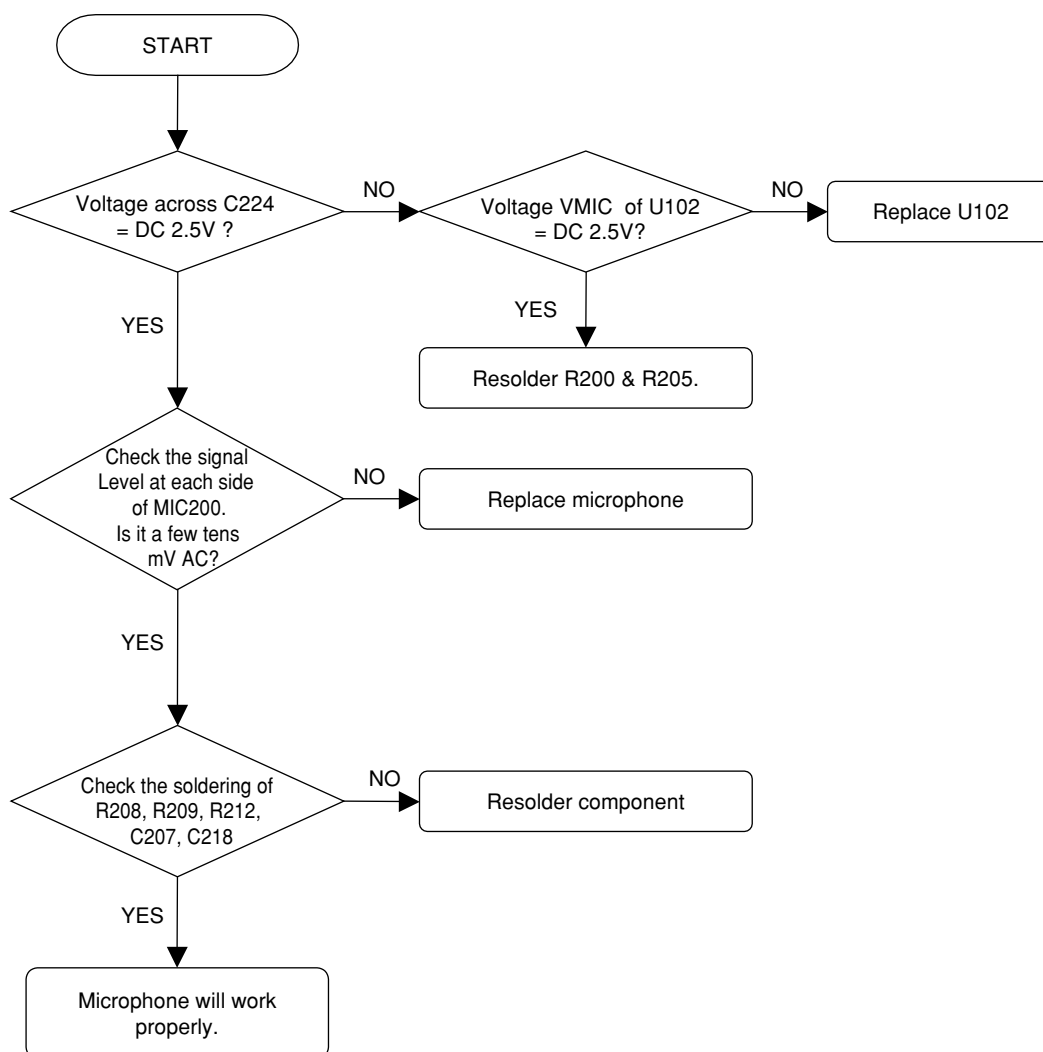
CIRCUIT DIAGRAM



4. Troubleshooting

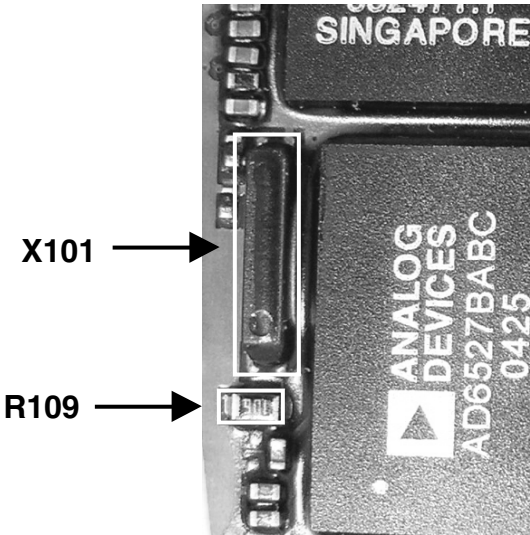
Checking Flow

SETTING : After initialize Agilent 8960, Test EGSM, DCS mode

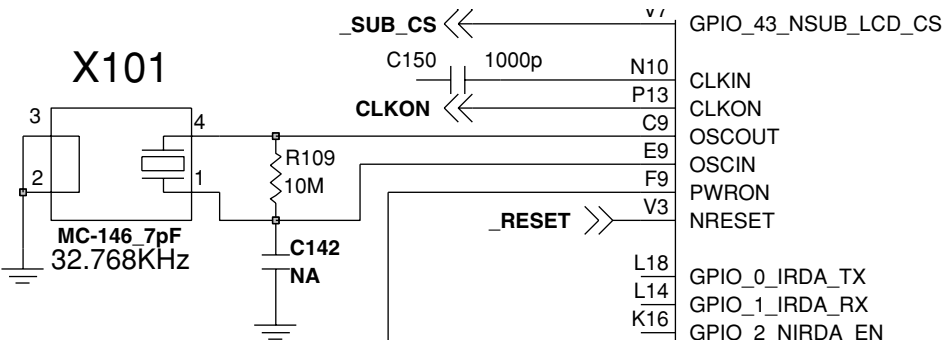


4.14 RTC Trouble

TEST POINT

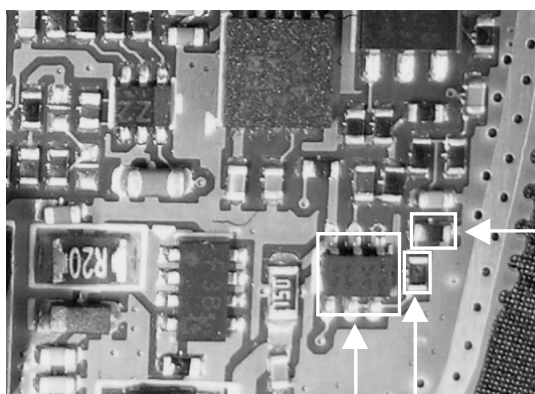


CIRCUIT DIAGRAM

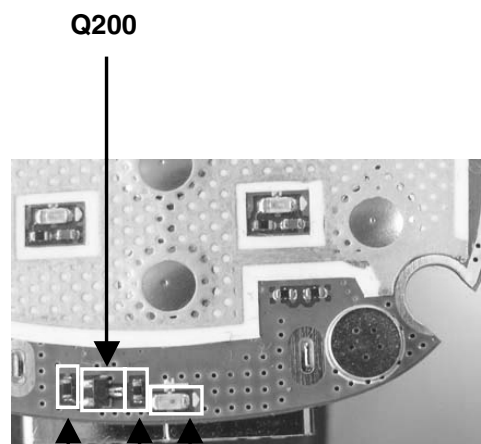


4.15 Indication LED Trouble

TEST POINT

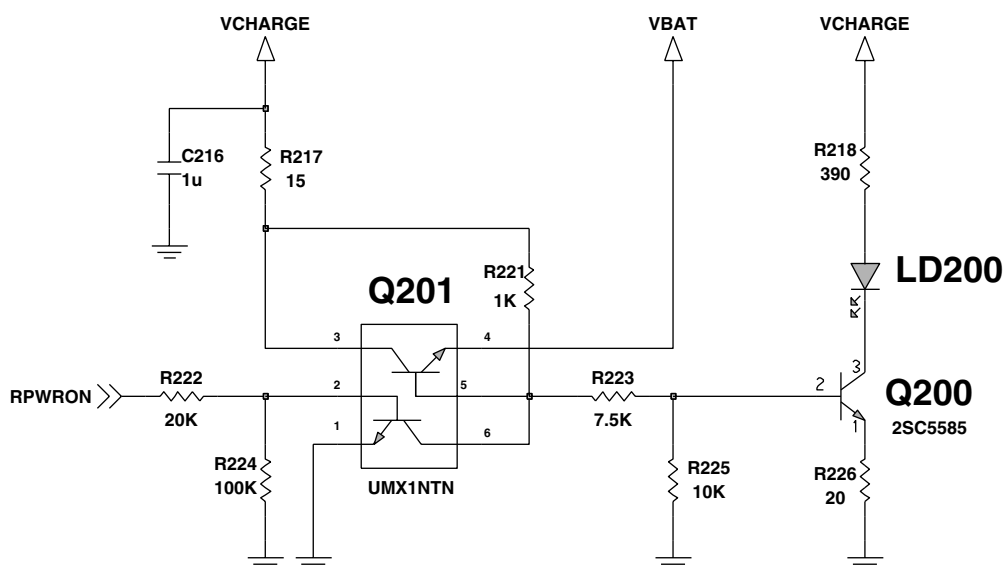


Q201 R223



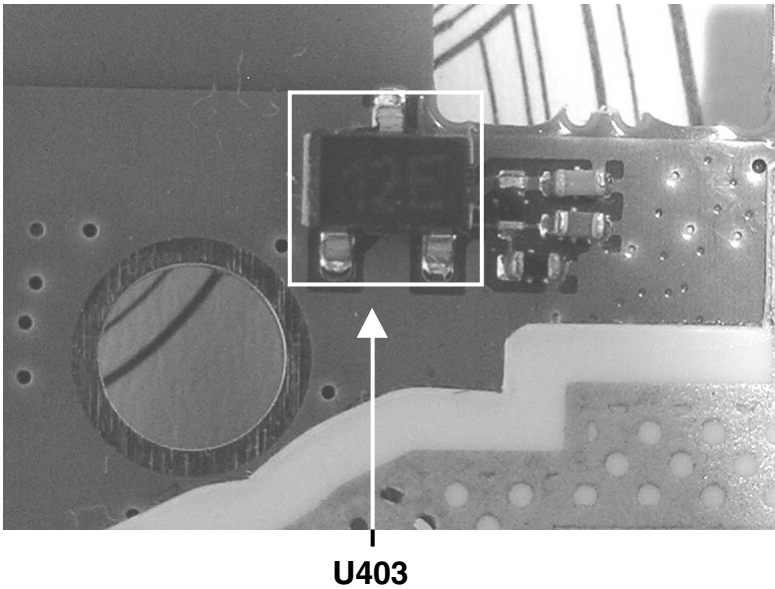
R226 R218 LD200

CIRCUIT DIAGRAM

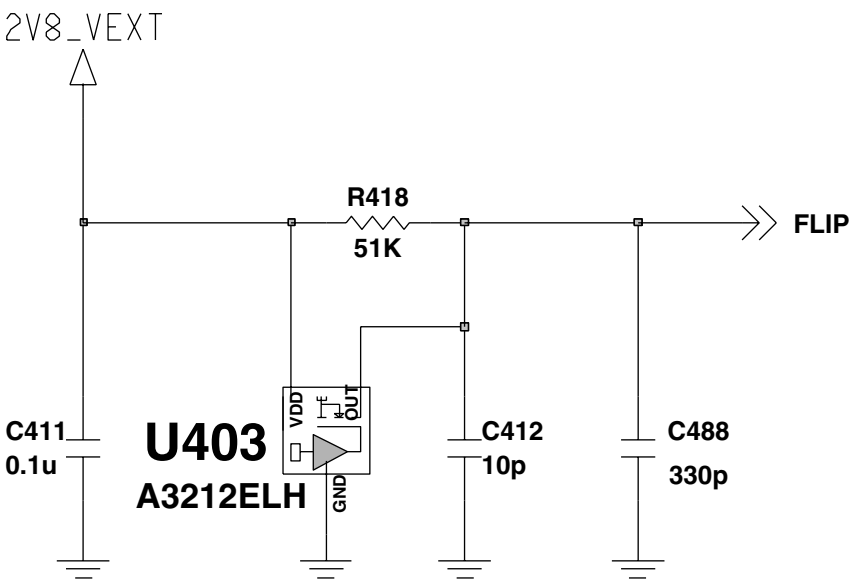


4.16 Folder on/off Trouble

TEST POINT



CIRCUIT DIAGRAM



5. DOWNLOAD AND CALIBRATION

5.1 Download

A. Download Setup

Figure 5-1 describes Download setup

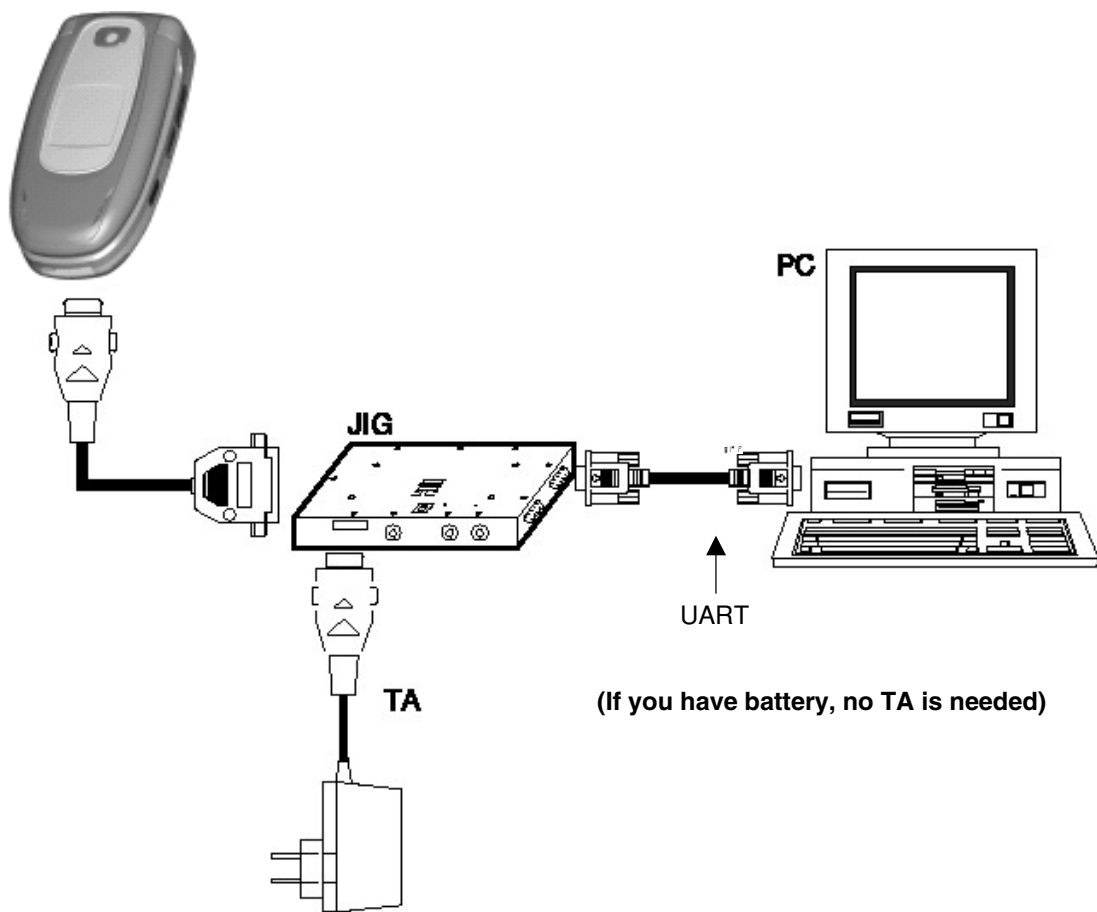
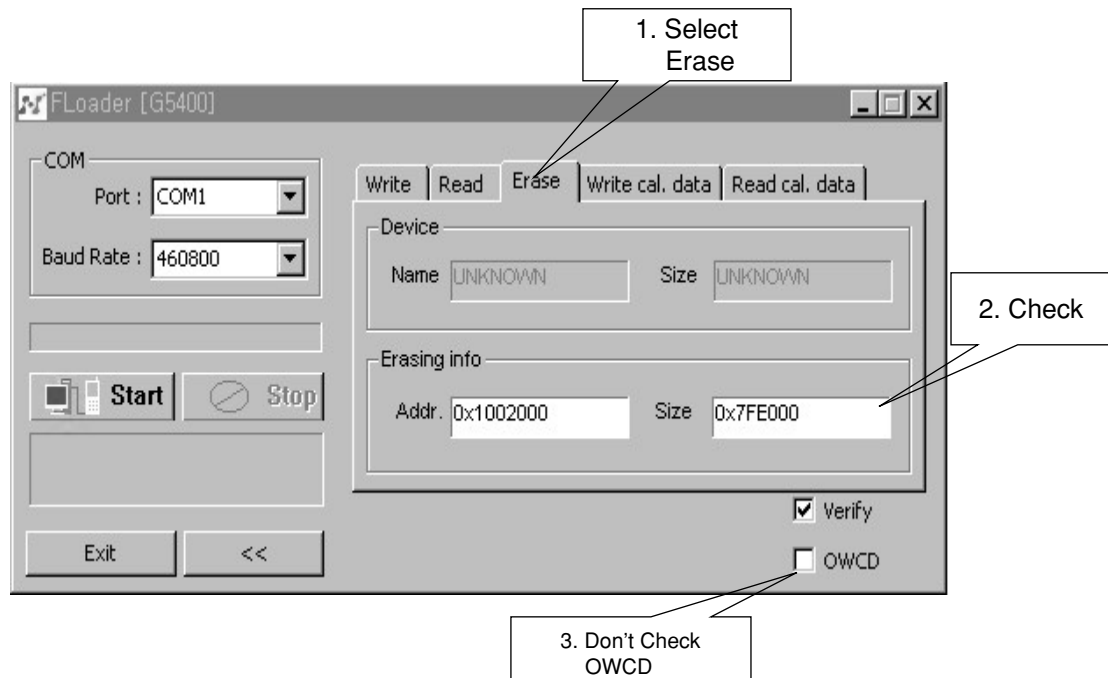


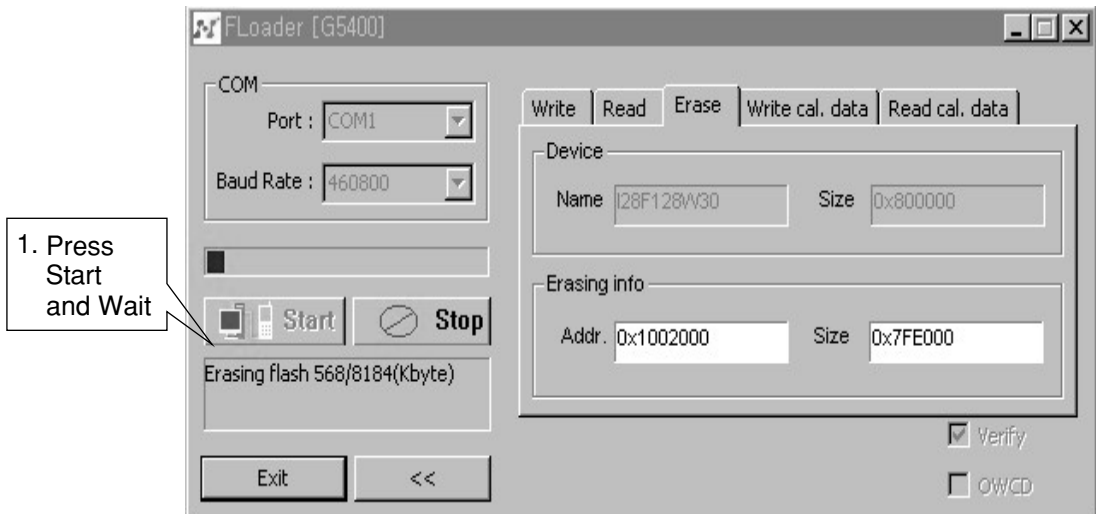
Figure 5-1. Download Setup

B. Download Procedure

1. Access Flash loader program in PC and select Erase.(Don't check OWCD)

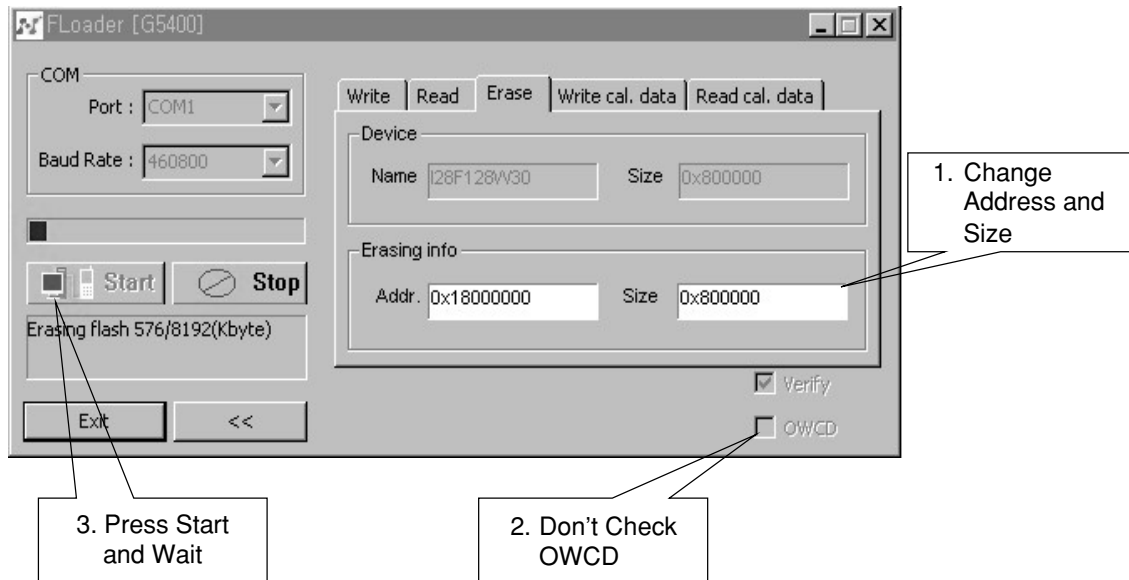


2. Press Start and Wait until Erase is completed.

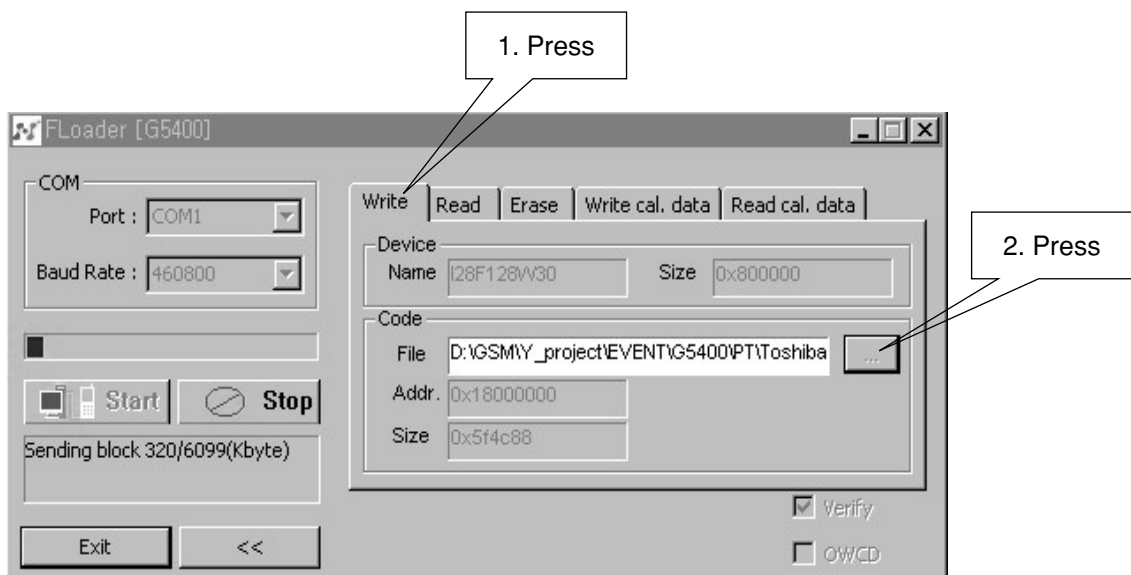


5. DOWNLOAD AND CALIBRATION

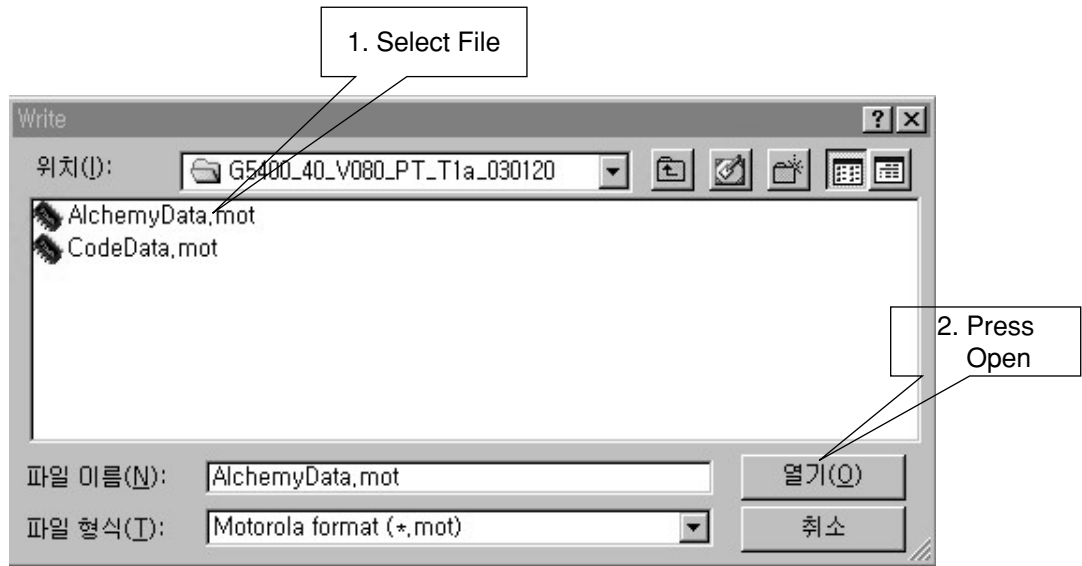
3. Change Address and Size(Address : 18000000, Size : 0x800000), and Press Start and Wait until Erase is completed again.



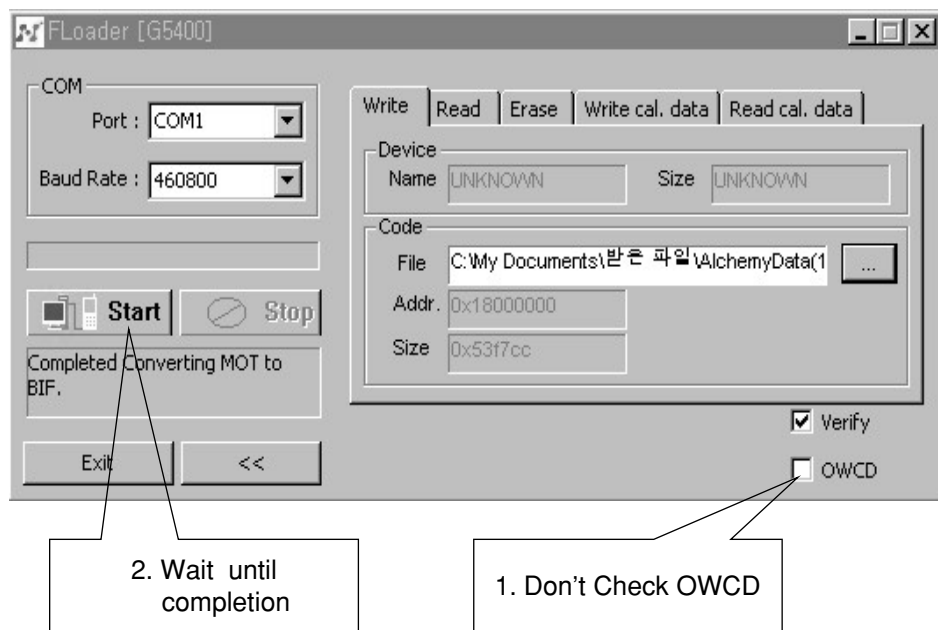
4. Press Write to start Download and press  Key to choose software (AlchemyData.mot)



5. Choose software

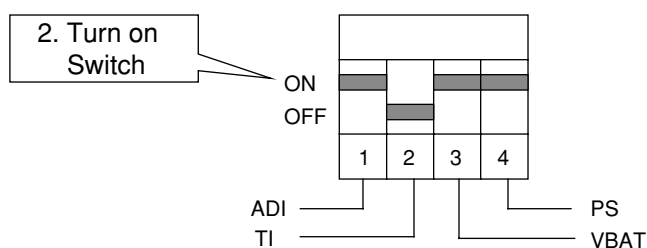
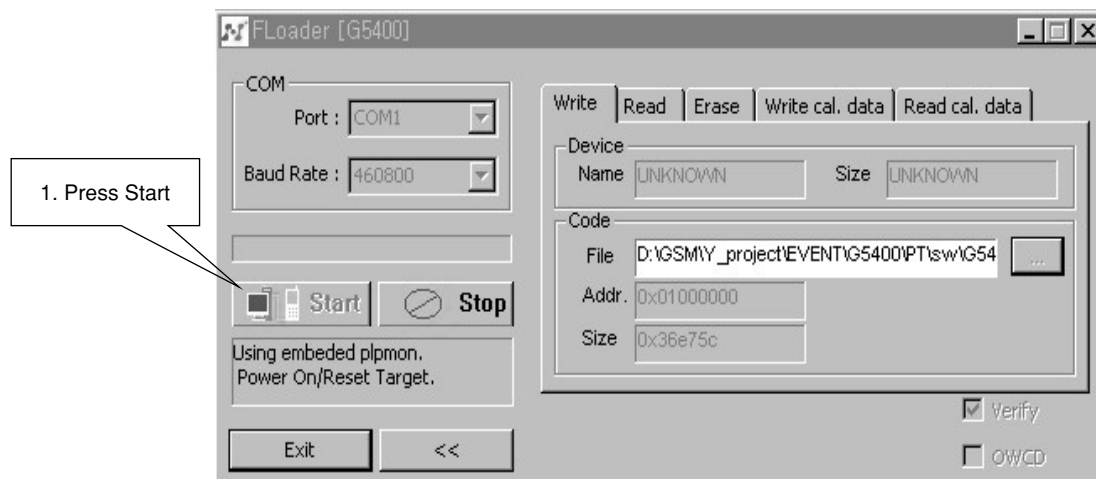


6. Wait until converting from MOT to BIF is completed(Don't check OWCD)

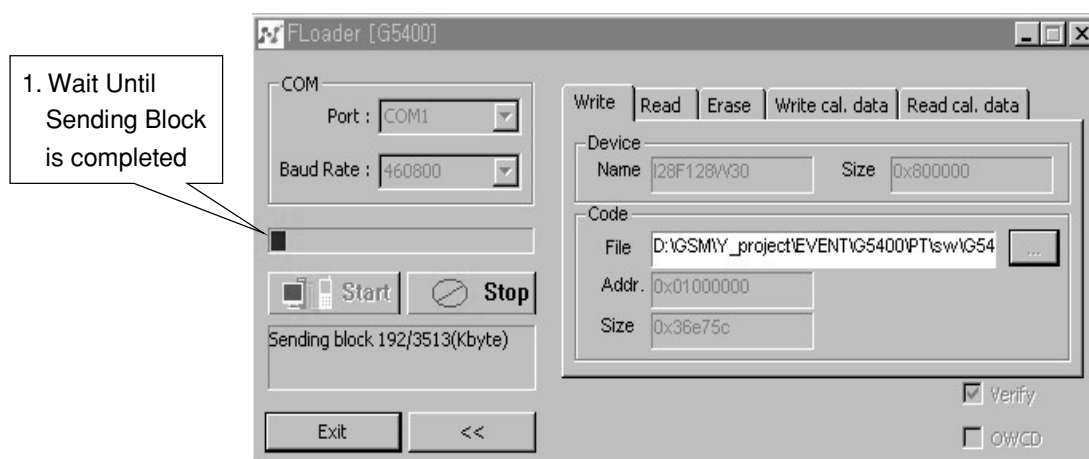


5. DOWNLOAD AND CALIBRATION

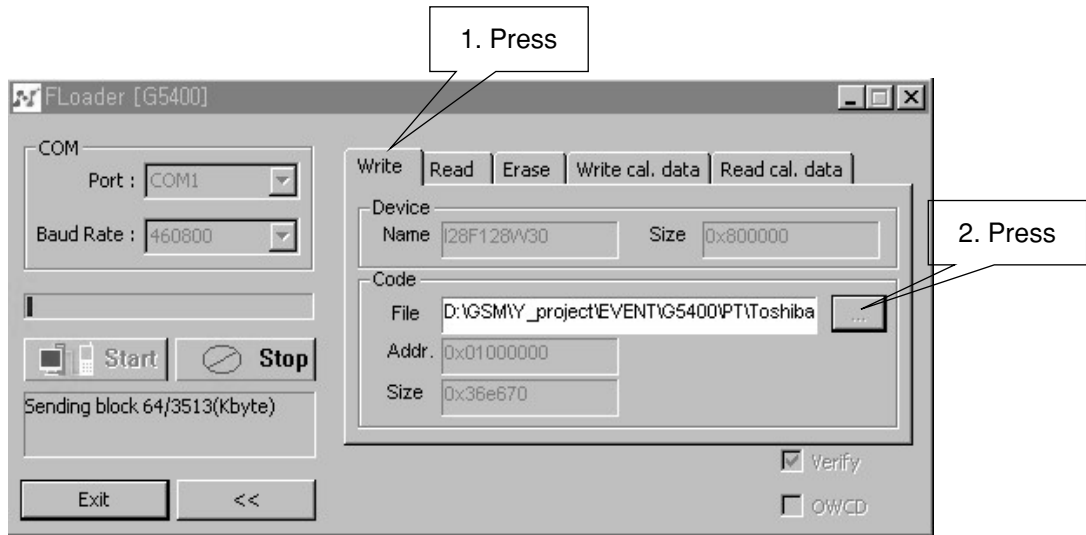
7. Press Start and Power on the phone using JIG remote Power on(Switch 1)



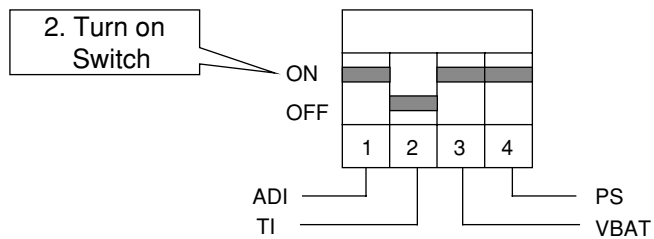
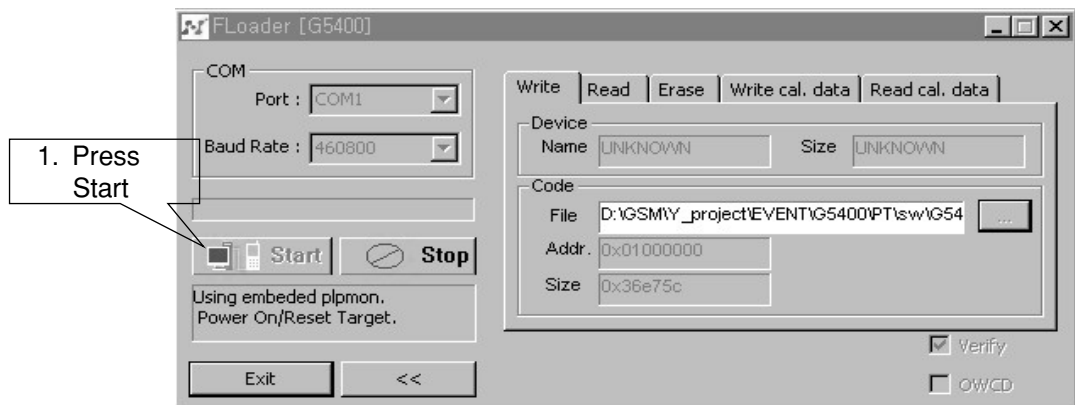
8. Wait until Sending Block is completed



9. Press Write to start Download and press  Key to choose software(CodeData.mot)

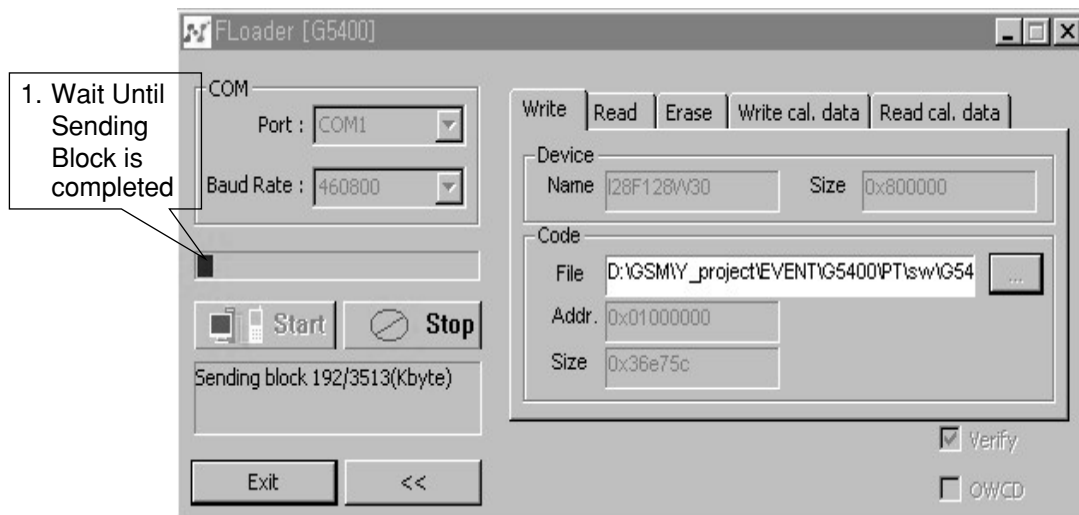


10. Choose software



5. DOWNLOAD AND CALIBRATION

11. Wait until Sending Block is completed



5.2 Calibration

A. Equipment List

Equipment for Calibration	Type/Model	Brand
Wireless Communication Test Set	HP-8960	Agilent
RS-232 Cable and Test JIG		LG
RF Cable		LG
Power Supply	HP-66311B	Agilent
GPIO interface card	HP-GPIO	Agilent
Calibration & Final test software		LG
Test SIM Card		
PC (for Software Installation)	Pentium II class above 300MHz	

Table 5-1. Calibration Equipment List.

B. Equipment Setup

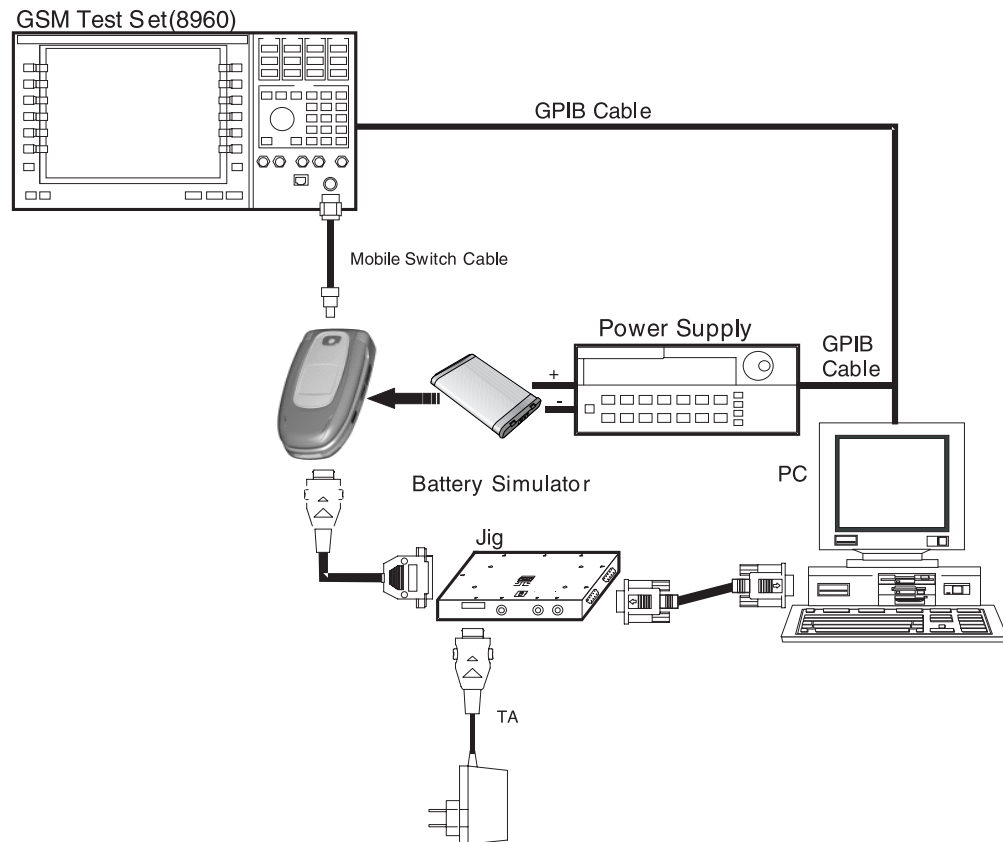


Figure 5-2. Equipment Setup

5. DOWNLOAD AND CALIBRATION

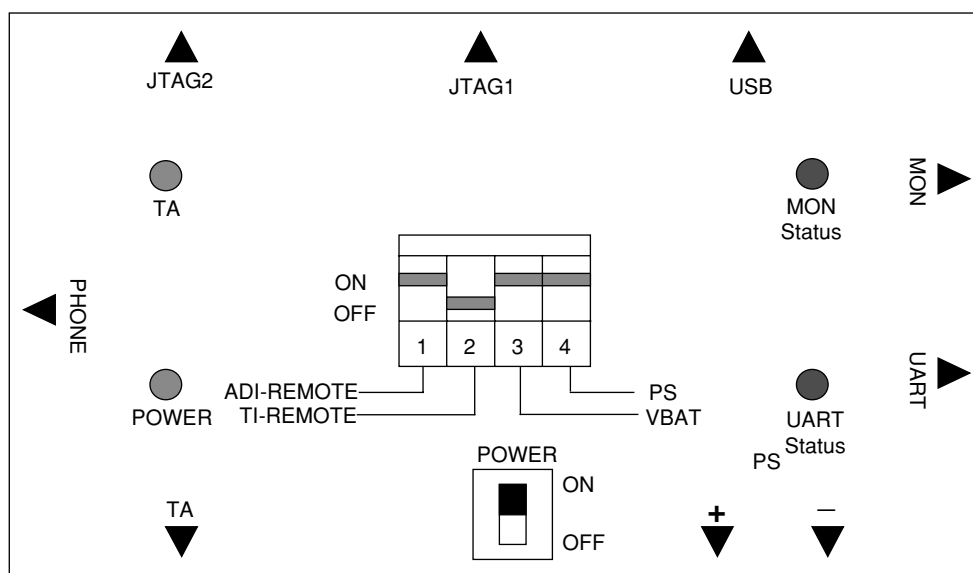


Figure 5-3 The top view of Test JIG

C. Test Jig Operation

Power Source	Description
Power Supply	usually 4.0V
Travel Adaptor	Use TA, name is TA-20G (24pin)

Table 5-2. Jig Power

Switch Number	Name	Description
Switch 1	ADI-REMOTE	In ON state, phone is awaked. It is used ADI chipset.
Switch 2	TI-REMOTE	In ON state, phone is awaked. It is used TI chipset.
Switch 3	VBAT	Power is provided for phone from battery
Switch 4	PS	Power is provided for phone from Power supply

Table 5-3. Jig DIP Switch

LED Number	Name	Description
LED 1	Power	Power is provided for Test Jig.
LED 2	TA	Indicate charging state of the phone battery
LED 3	UART	Indicate data transfer state through the UART port
LED 4	MON	Indicate data transfer state through the MON port

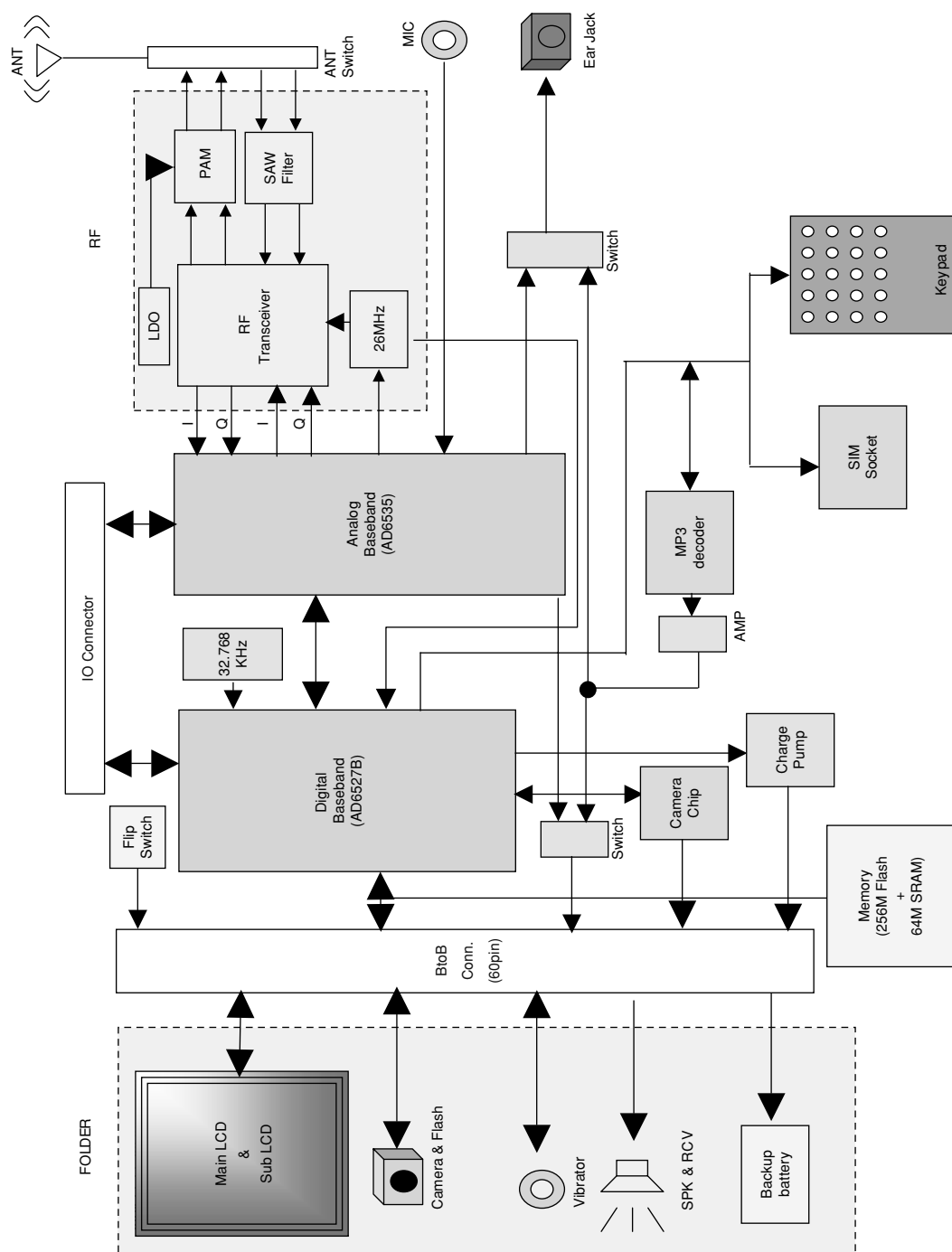
Table 5-4. LED Description

1. Connect as Fig 5-2(RS232 serial cable is connected between COM port of PC and MON port of TEST JIG, in general)
2. Set the Power Supply 4.0V
3. Set the 3 rd , 4 th of DIP SW ON state always
4. Press the Phone power key, if the Remote ON is used, 1 st ON state

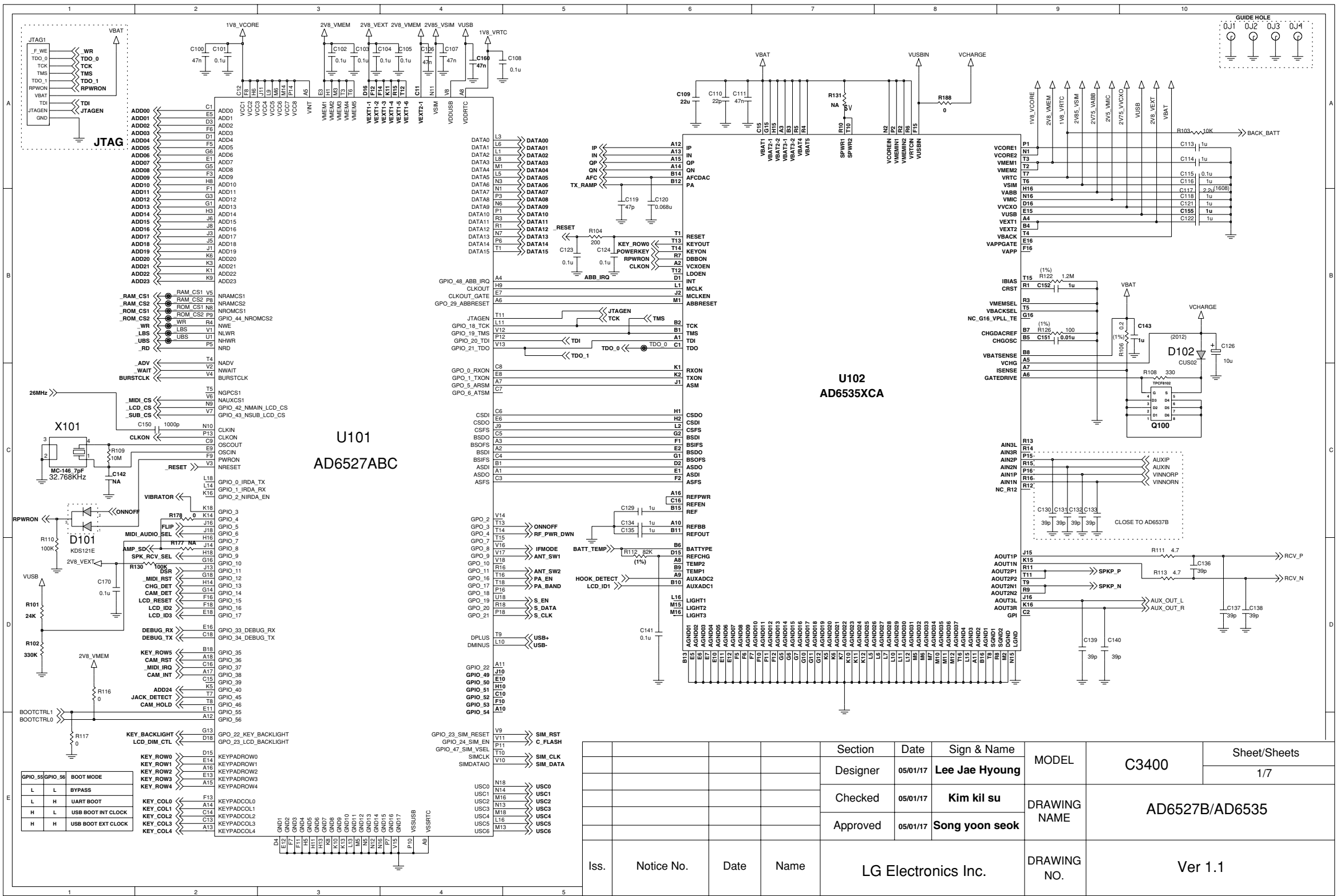
D. Procedure

1. Connect as Fig 5-2(RS232 serial cable is connected between COM port of PC and MON port of TEST JIG, in general)
2. Power ON PC then enter into Windows 98(Remark : Windows 2000 system could be feasible)
3. Run AUTOCAL.exe, the AUTOCAL application window will be appeared.

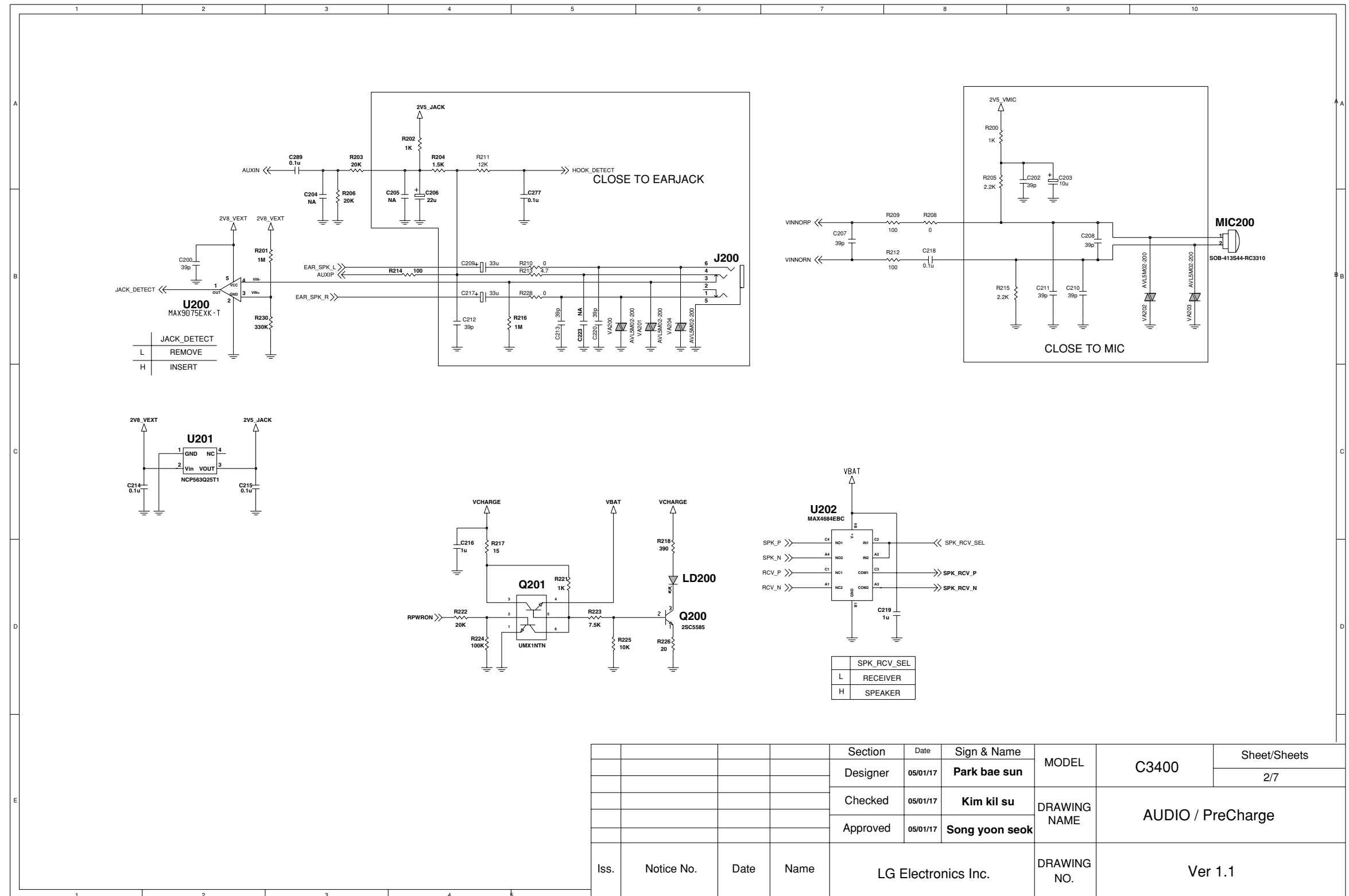
6. BLOCK DIAGRAM

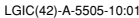


7. CIRCUIT DIAGRAM

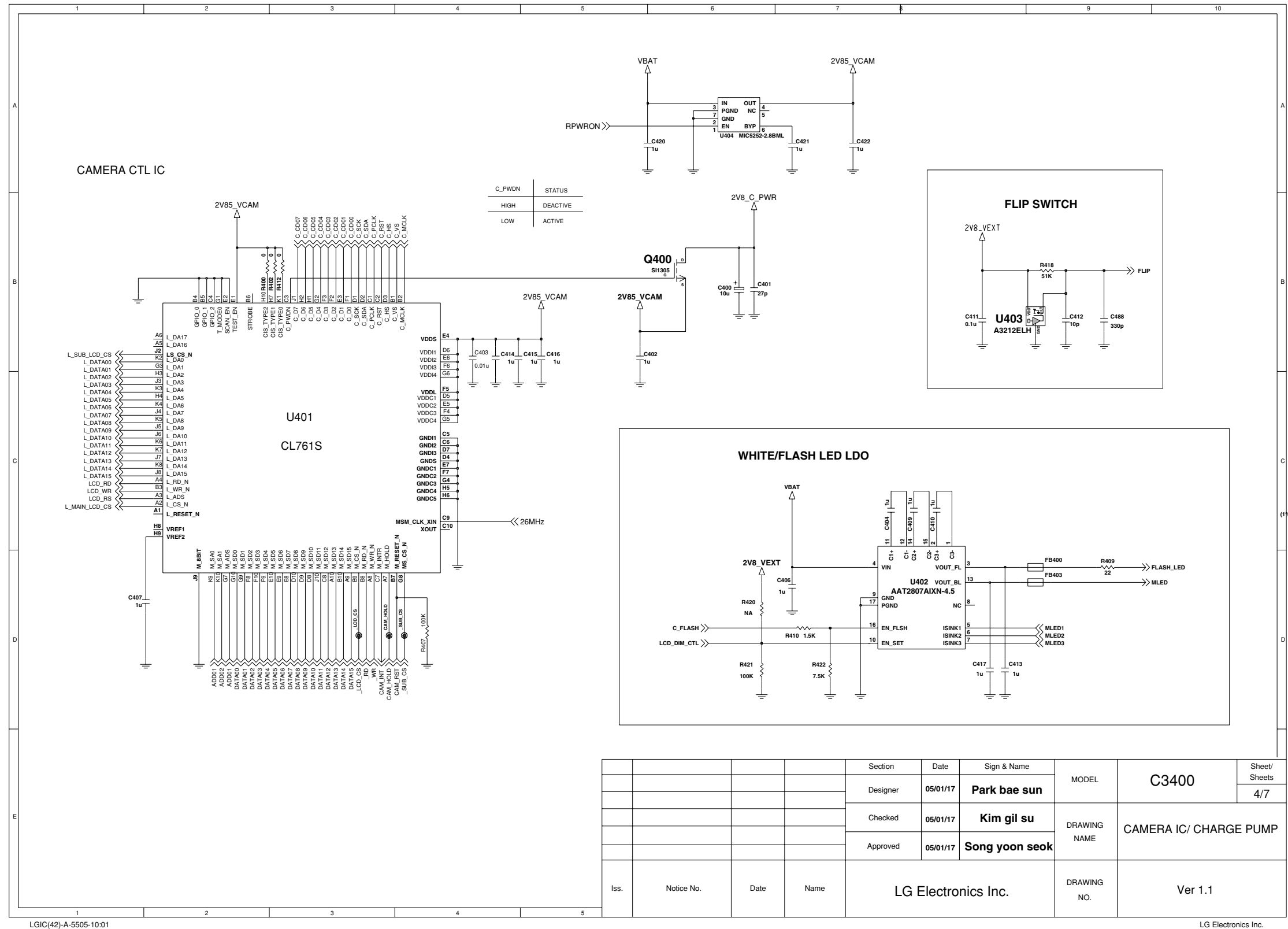


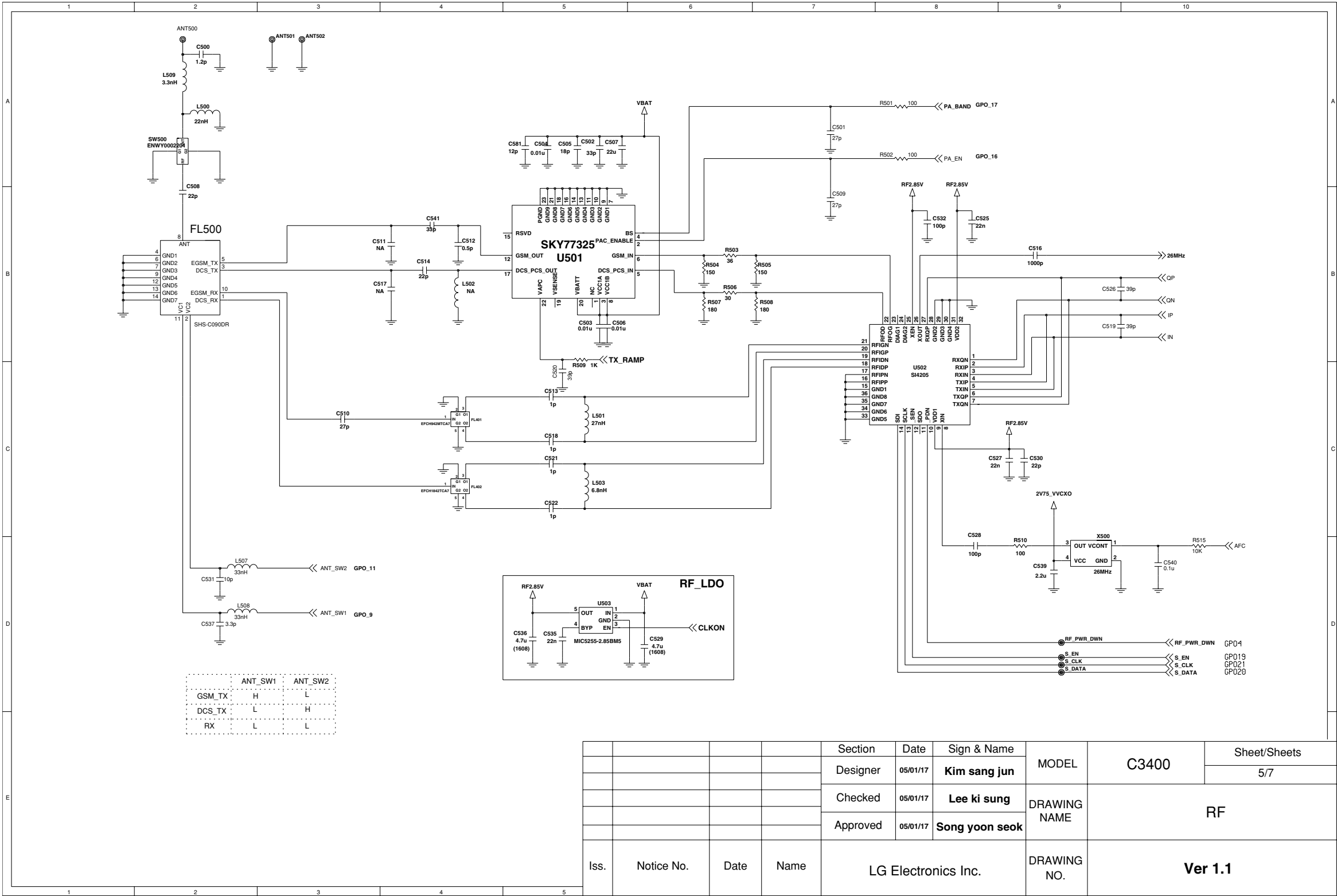
7. CIRCUIT DIAGRAM





7. CIRCUIT DIAGRAM

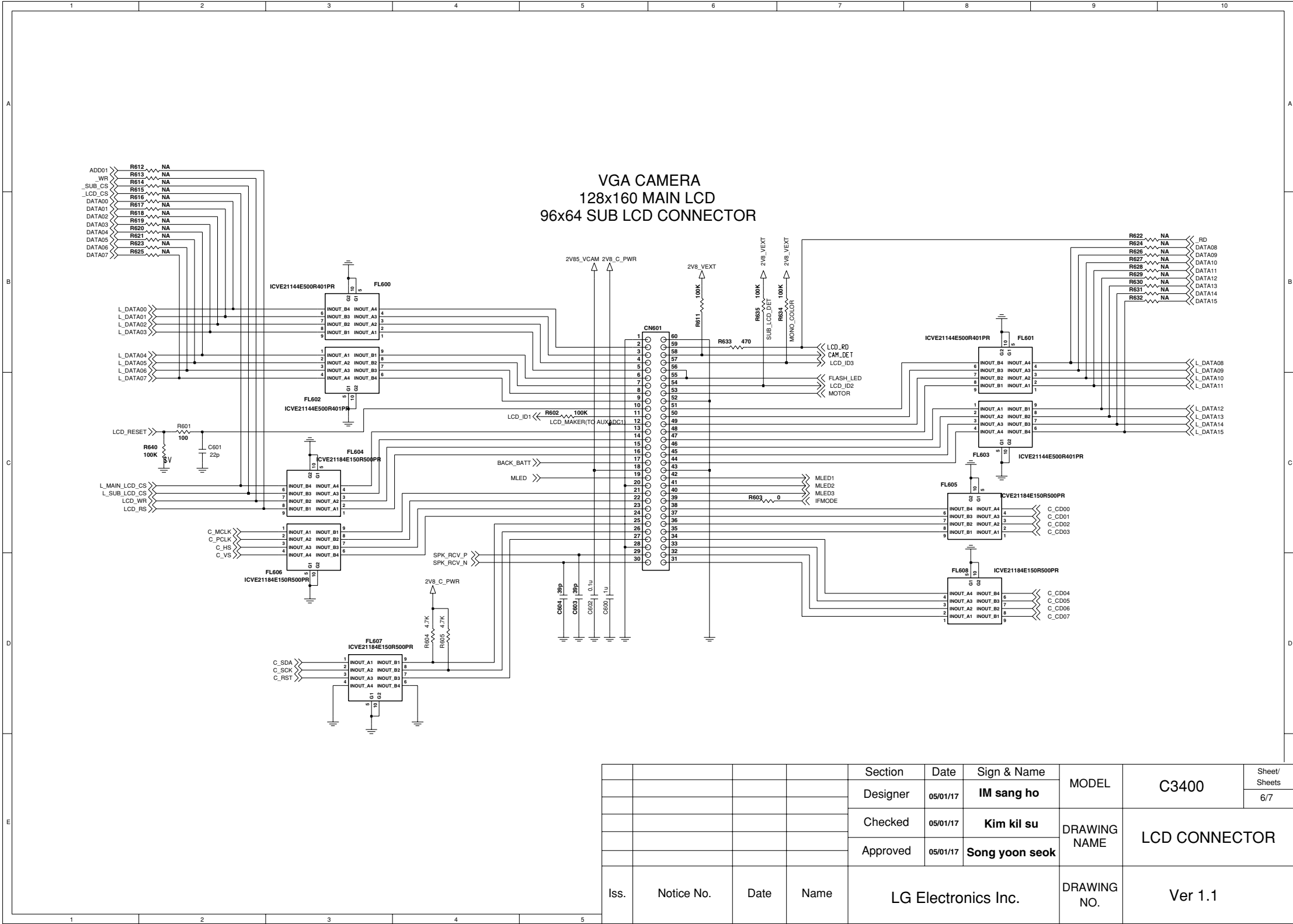




LGIC(42)-A-5505-10:01

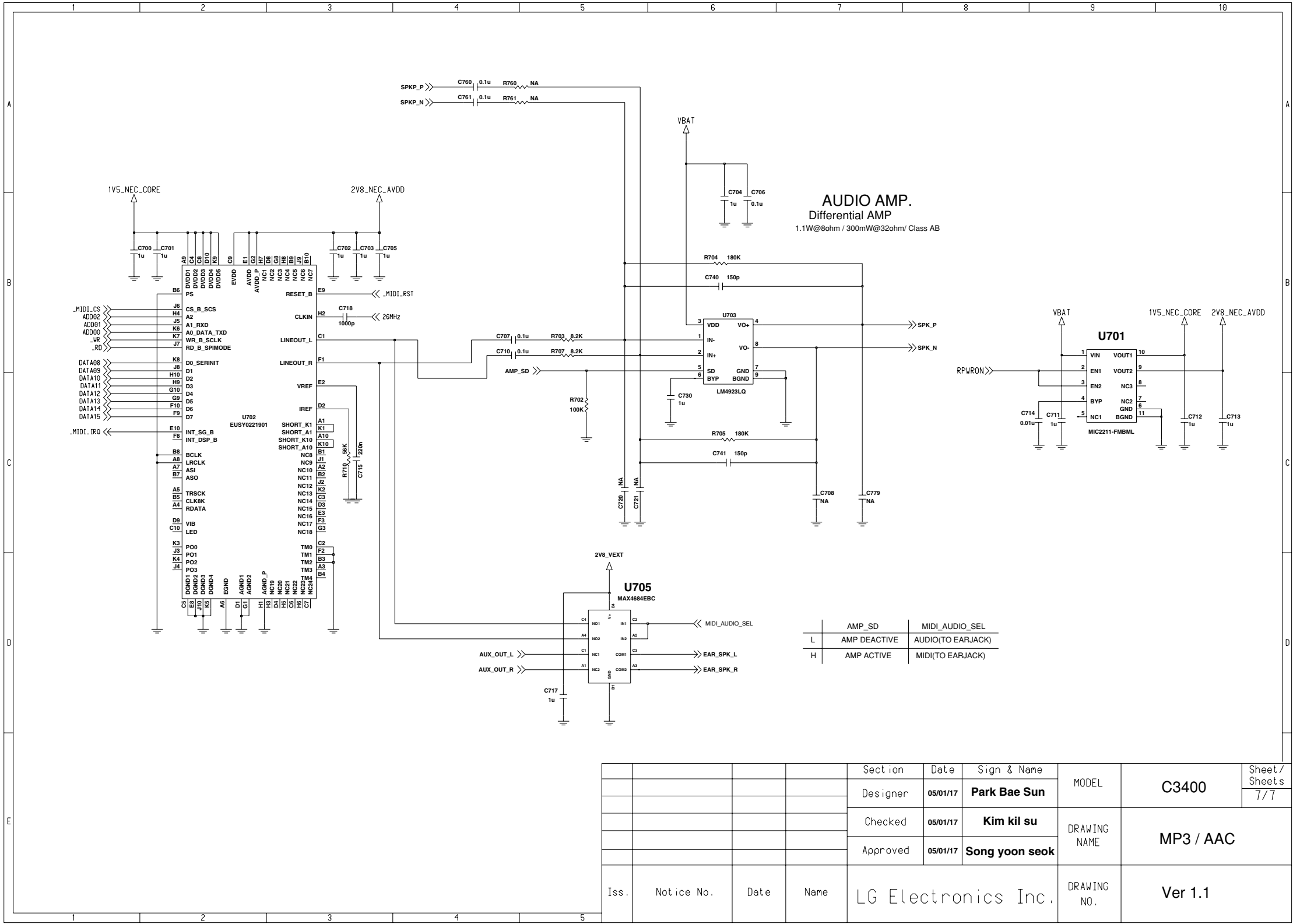
LG Electronics Inc.

7. CIRCUIT DIAGRAM

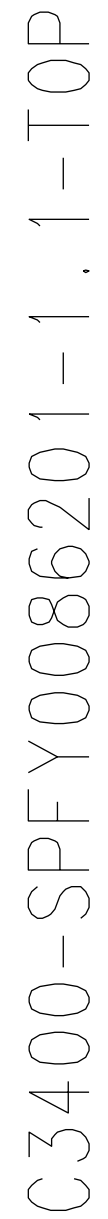


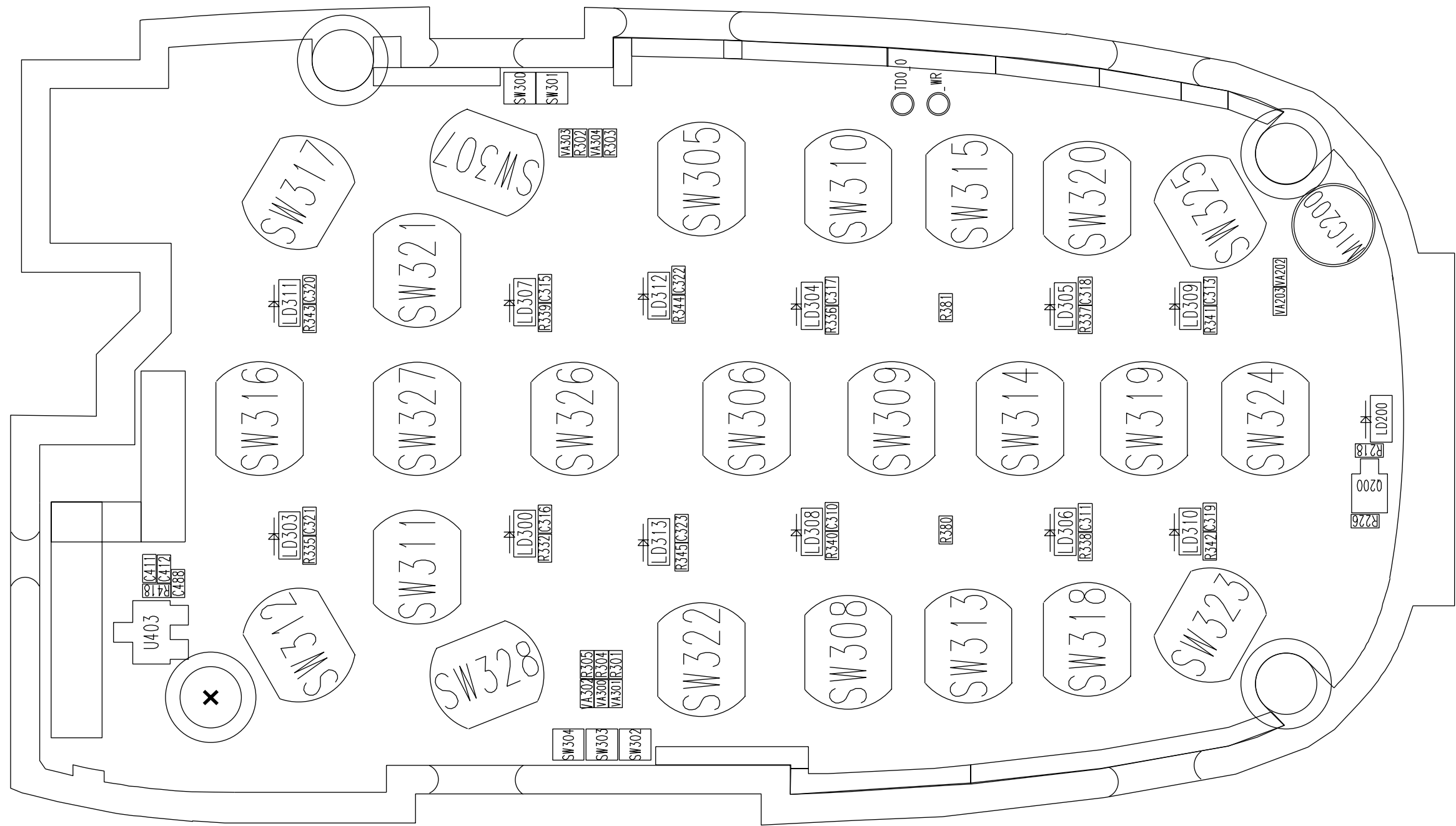
LGIC(42)-A-5505-10-01

LG Electronics Inc.



LG Electronics Inc.





C3400-SPFY0086201-1.1-BTM

9. ENGINEERING MODE

A. About Engineering Mode

Engineering mode is designed to allow a service man/engineer to view and test the basic functions provided by a handset.

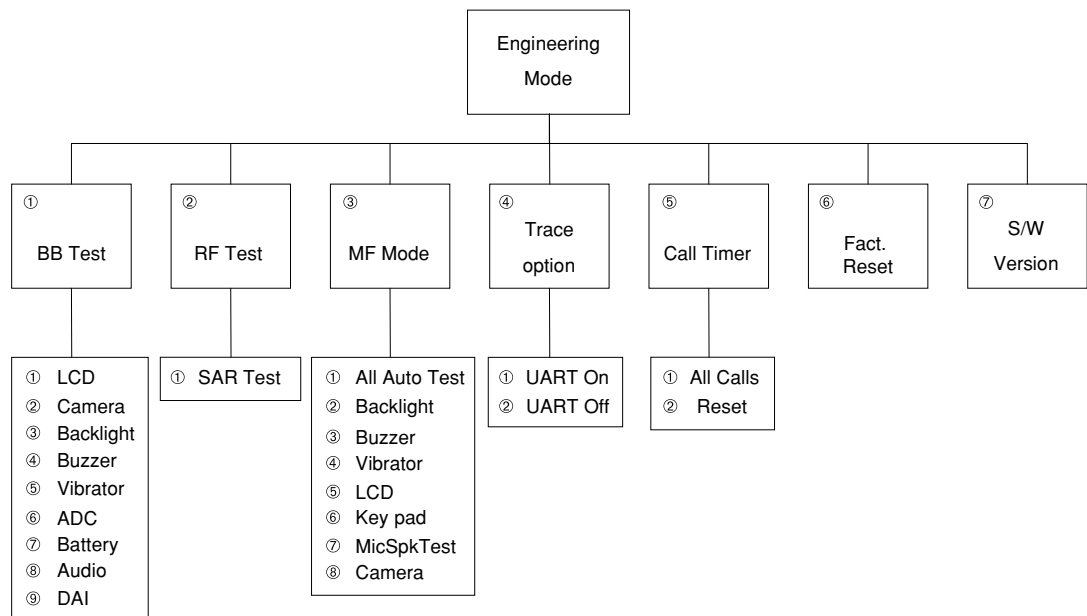
B. Access Codes

The key sequence for switching the engineering mode on is 2945#*#. Pressing END will switch back to non-engineering mode operation.

C. Key Operation

Use Up and Down key to select a menu and press 'select' key to progress the test. Pressing 'back' key will switch back to the original test menu.

D. Engineering Mode Menu Tree



9.1 BB Test [MENU 1]

9.1.1 LCD

- 1) **Contrast value:** This menu is to control LCD Backlight from contrast value=80 to contrast value=100.

9.1.2 Camera

- 1) **Main LCD preview :** This menu is to test Camera preview on Main LCD screen.
- 2) **Sub LCD Preview :** This menu is to test Camera preview on Sub LCD screen.
- 3) **Flash on :** This menu is to test Folder Flash light.
 - Select this menu if you want to turn on folder flash light.
- 4) **Flash off :** This menu is to test Folder Flash light.
 - Select this menu if you want to turn off folder flash light.

9.1.3 Backlight

This menu is to test the LCD Backlight and Keypad Backlight.

- 1) **Backlight on :** LCD Backlight and Keypad Backlight light on at the same time.
- 2) **Backlight off :** LCD Backlight and Keypad Backlight light off at the same time.
- 3) **Backlight value :** This controls brightness of Backlight. When entering into the menu, the present backlight-value in the phone is displayed. Use Left/Right key to adjust the level of brightness. The value of the brightness set at last will be saved in the NVRAM.

9.1.4 Buzzer

This menu is to test the melody sound.

- 1) **Melody on :** Melody sound is played through the speaker.
- 2) **Melody off :** Melody sound is off.

9.1.5 Vibrator

This menu is to test the vibration mode.

- 1) **Vibrator on :** Vibration mode is on.
- 2) **Vibrator off :** Vibration mode is off.

9.1.6 ADC (Analog to Digital Converter)

This displays the value of each ADC.

- 1) **MVBAT ADC :** Main Voltage Battery ADC
- 2) **AUX ADC :** Auxiliary ADC
- 3) **TEMPER ADC :** Temperature ADC

9.1.7 BATTERY

- 1) **Bat Cal :** This displays the value of Battery Calibration. The following menus are displayed in order : BAT_LEV_4V, BAT_LEV_3_LIMIT, BAT_LEV_2_LIMIT, BAT_LEV_1_LIMIT, BAT_IDLE_LIMIT, BAT_INCALL_LIMIT, SHUT_DOWN_VOLTAGE, BAT_RECHARGE_LMT
- 2) **TEMP Cal :** This displays the value of Temperature Calibration. The following menus are displayed in order : TEMP_HIGH_LIMIT, TEMP_HIGH_RECHARGE_LMT, TEMP_LOW_RECHARGE_LMT, TEMP_LOW_LIMIT

9.1.8 Audio

This is a menu for setting the control register of Voiceband Baseband Codec chip. Although the actual value can be written over, it returns to default value after switching off and on the phone.

- 1) VbControl1** : VbControl1 bit Register Value Setting
- 2) VbControl2** : VbControl2 bit Register Value Setting
- 3) VbControl3** : VbControl3 bit Register Value Setting
- 4) VbControl4** : VbControl4 bit Register Value Setting
- 5) VbControl5** : VbControl5 bit Register Value Setting
- 6) VbControl6** : VbControl6 bit Register Value Setting

9.1.9 DAI (Digital Audio Interface)

This menu is to set the Digital Audio Interface Mode for Speech Transcoder and Acoustic testing.

- 1) DAI AUDIO** : DAI audio mode
- 2) DAI UPLINK** : Speech encoder test
- 3) DAI DOWNLINK** : Speech decoder test
- 4) DAI OFF** : DAI mode off

9.2 RF Test [MENU 2]

9.2.1 SAR test

This menu is to test the Specific Absorption Rate.

- 1) SAR test on** : Phone continuously process TX only. Call-setup equipment is not required.
- 2) SAR test off** : TX process off

9.3 MF mode [MENU 3]

This manufacturing mode is designed to do the baseband test automatically. Selecting this menu will process the test automatically, and phone displays the previous menu after completing the test.

9.3.1 All auto test

LCD, Backlight, Vibrator, Buzzer, Key Pad, Mic&Speaker,

9.3.2 Backlight

LCD Backlight is on for about 1.5 seconds at the same time, then off.

9.3.3 Buzzer

This menu is to test the volume of Melody. It rings in the following sequence. Volume 1, Volume 2, Volume 3, Volume 0 (mute), Volume 4, Volume 5.

9.3.4 Vibrator

Vibrator is on for about 1.5 seconds.

9. ENGINEERING MODE

9.3.5 LCD

1)LCD

Main LCD screen resolution tests horizontally and vertically one by one and fills the screen.

2)SubLCD

Sub LCD screen resolution tests horizontally and vertically one by one and fills the screen.

9.3.6 Key pad

When a pop-up message shows 'Press Any Key', you may press any keys including side keys, but not [Soft2 Key]. If the key is working properly, name of the key is displayed on the screen. Test will be completed in 15 seconds automatically.

9.3.7 MicSpk Test

The sound from MIC is recorded for about 3 seconds, then it is replayed on the speaker automatically.

9.3.8 Camera

Camera preview function is activated on Main LCD screen.

9.4 Trace option [MENU 4]

This is NOT a necessary menu to be used by neither engineers nor users.

9.5 Call timer [MENU 5]

This menu is to set the Digital Audio Interface Mode for Speech Transcoder and Acoustic testing.

1) **All calls** : This displays total conversation time. User cannot reset this value.

2) **Reset settings** : This resets total conversation time to this, [00:00:00].

9.6 Fact. Reset [MENU 6]

This Factory Reset menu is to format data block in the flash memory and this procedure set up the default value in data block.

Attention

① Fact. Reset (i.e.Factory Reset) should be only used during the Manufacturing process.

② Servicemen should NOT progress this menu, otherwise some of valuable data such as Setting value, RF Calibration data, etc. cannot be restored again.

9.7 S/W version

This displays software version stored in the phone.

10. STAND ALONE TEST

10.1 Introduction

This manual explains how to examine the status of RX and TX of the model.

A. Tx Test

TX test - this is to see if the transmitter of the phones is activating normally.

B. Rx Test

RX test - this is to see if the receiver of the phones is activating normally.

10.2 Setting Method

A. COM port

- a. Move your mouse on the "Connect" button, then click the right button of the mouse and select "Com setting".
- b. In the "Dialog Menu", select the values as explained below.
 - Port : select a correct COM port
 - Baud rate : 38400
 - Leave the rest as default values

B. Tx

1. Selecting Channel

- Select one of GSM or DCS Band and input appropriate channel.

2. Selecting APC

- a. Select either Power level or Scaling Factor.
- b. Power level
 - Input appropriate value GSM (between 5~19) or DCS (between 0~15)
- c. Scaling Factor
 - A 'Ramp Factor' appears on the screen.
 - You may adjust the shape of the Ramp or directly input the values.

C. Rx

1. Selecting Channel

- Select one of GSM or DCS Band and input appropriate channel.

2. Gain Control Index (0~ 26) and RSSI level

- See if the value of RSSI is close to -16dBm when setting the value between 0 ~ 26 in Gain Control Index.
- Normal phone should indicate the value of RSSI close to -16dBm.

10.3 Means of Test

- Select a COM port
- Set the values in Tx or Rx
- Select band and channel
- After setting them all above, press connect button.
- Press the start button

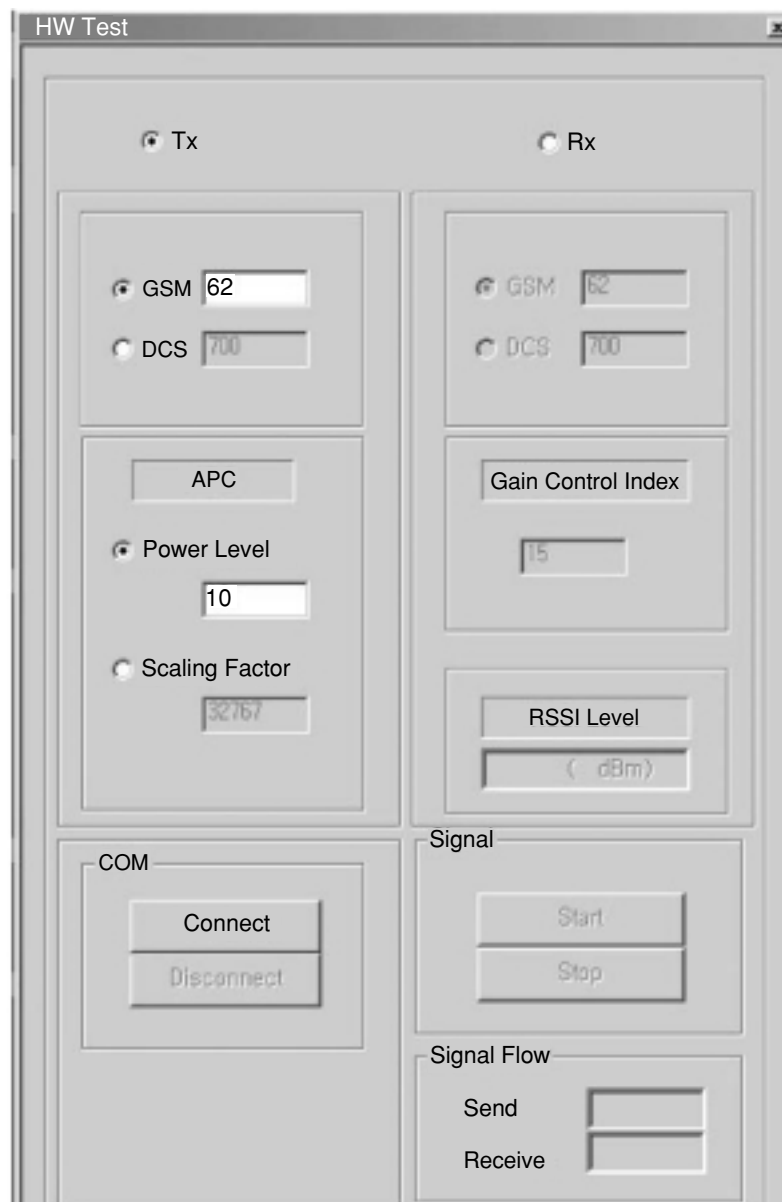


Figure 10-1. HW test program

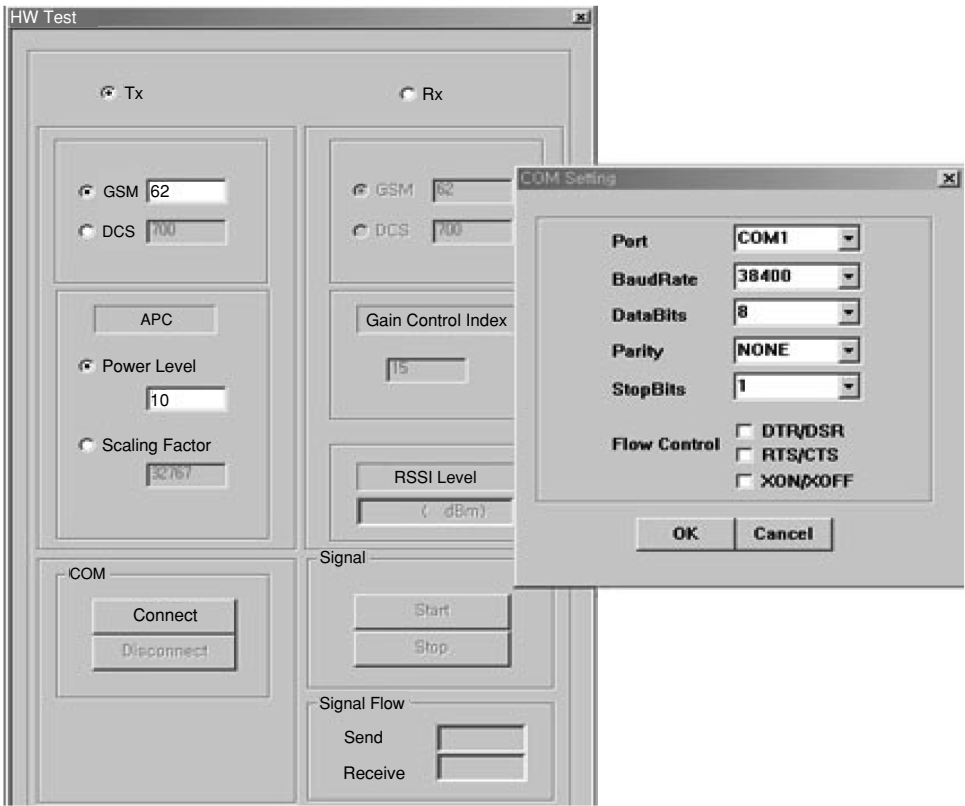


Figure 10-1. HW test program

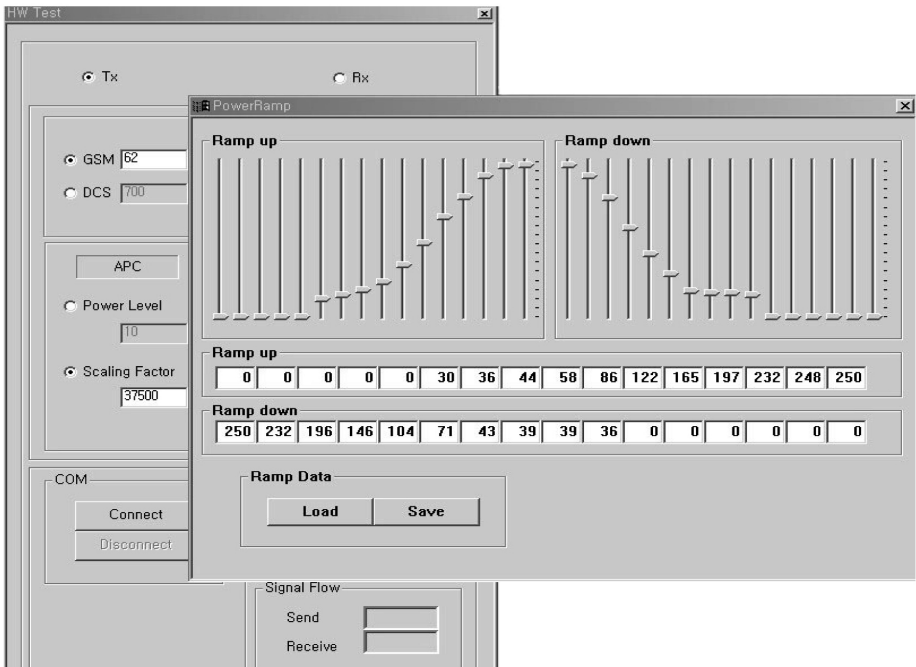


Figure 10-1. HW test program

11. AUTO CALIBRATION

11.1 Overview

Autocal (Auto Calibration) is the PC side Calibration tool that perform Tx ,Rx and Battery Calibration with Agilent 8960 (GSM call setting instrument) and Tektronix PS2521G (Programmable Power supply).

Autocal generate calibration data by communicating with phone and measuring equipment then write it into calibration data block of flash memory in GSM phone.

11.2. Requirements

- PC or Notebook installed with Microsoft Windows 98/ME/2000/XP
- Auto Calibration program(Autocal.exe)
- GSM Phone
- LGE PIF JIG, Serial Cable, Data Cable
- Agilent 8960(Call Setting Instrument)
- Tektronix PS2521G(Programmable Power Supply)

11.3 Menu and Settings

- File(F) Clear View : Clear Calibration Status window texts
- File(F) Save View : Save Calibration Status window texts
- File(F) Save Setting : Save Current Calibration settings to setting file(*.cal)
- File(F) Load Setting : Load saved Calibration setting
- File(F) Make BIN ALL : Make binary file after calibration finished
- File(F) Make BIN BAT.Cal only : Make binary file of battery cal data only after calibration finished
- File(F) Make & Write BIN : Make binary file after calibration finished then download it to the Flash Memory
- View(V) Tools : Enable or disable Tool bar
- View(V) Status : Enable or disable status bar
- Connection(C) Connect : Connect the phone with PC. This procedure checks whether the PC is connected "ag8960 " or not. After that it performs sync. procedure with phone. If the sync. procedure is successful state column on status bar changed to SETUP, else you should disconnect phone and try again from the beginning and also check the whole connection. All measurement is performed at state SETUP.
- Connection(C) Port Setting : Show COM port setting dialog and Baudrate you can change,etc.
- GPIB(G) Connect : Connect the Ag8960 GPIB card with PC.

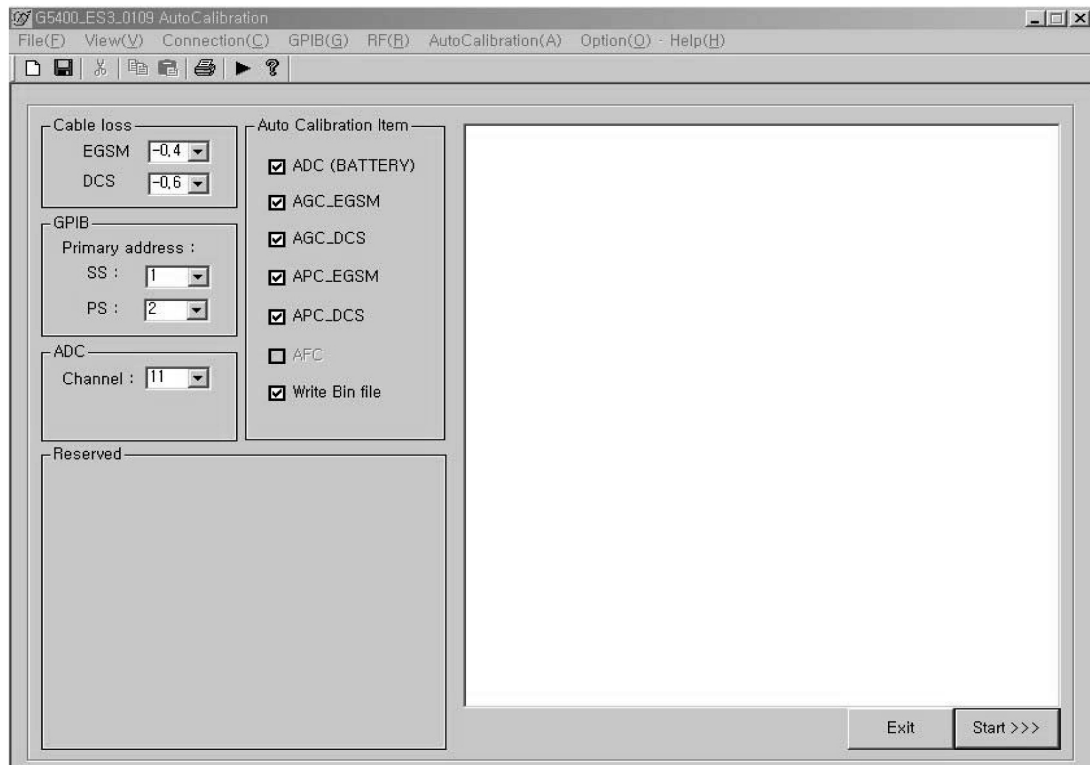


Figure 11-1. Auto Calibration Program

- | | |
|--------------------------------|---|
| Screen → Cable loss | : Enter the RF cable loss GSM and DCS |
| Screen → GPIB(Primary address) | : Enter the SS(Ag8960) and PS(Tektronix PS2521G) GPIB address |
| Screen → ADC Channel | : Default ADC Calibration Channel |
| Screen → Auto Calibration Item | : Default Calibration Settings about Tx, Rx, ADC and write BIN file |

11.4 AGC

This procedure is for Rx calibration.

In this procedure, We can get RSSI correction value. Set band EGSM and press Start button the result window will show correction values per every power level and gain code and the same measure is performed per every frequency.

11.5 APC

This procedure is for Tx calibration.

In this procedure you can get proper scale factor value and measured power level.

11.6 ADC

This procedure is for battery calibration.

You can get main Battery Config Table and temperature Config Table

11.7 Setting

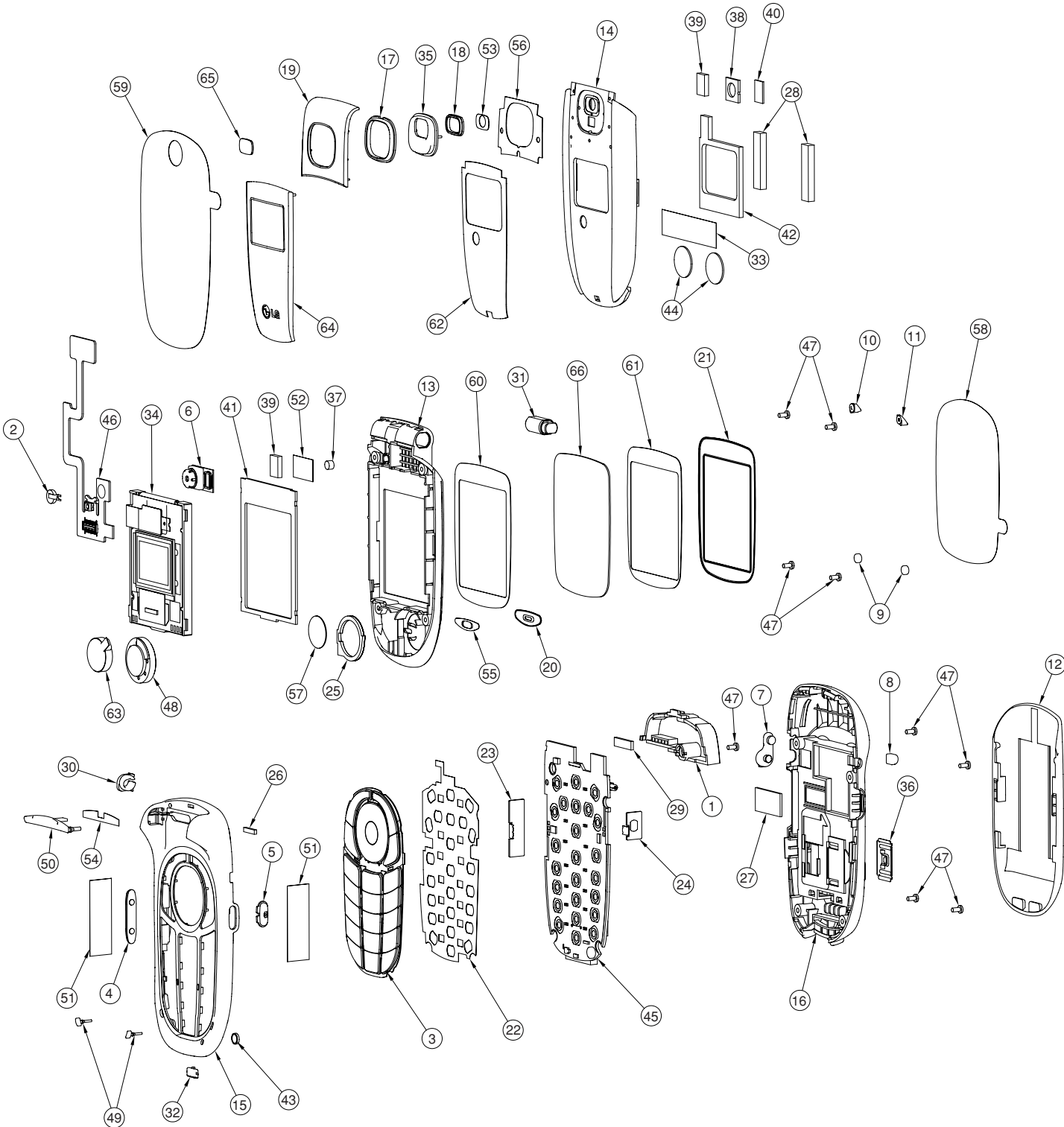
check com port and cable loss. Select automatic calibration item. If you uncheck one item calibration will stop from the unchecked item. This is useful when you want to process only one item.

11.8 How to do calibration

- A. Connect cable between phone and serial port of PC.
- B. Connect Ag8960 equipment and Power Supply and phone.
- C. Set correct port and baud rate.
- D. Press Start button. AutoCal process all calibration procedure
 - i. AGC EGSM
 - ii. AGC DCS
 - iii. APC EGSM
 - iv. APC DCS
 - v. ADC
- E. After finished all measurement. The state is return to SETUP.
- F. The Cal file will be generated and then the calibration data will be written into phone and then will be reset.

12. EXPLODED VIEW & REPLACEMENT PART LIST

12.1 EXPLODED VIEW



No.	PART NAME	PART No.	Q'ty	TYPE
1	ANTENNA,GSM,FIXED	SNGF0006301	1	PART
2	BATTERY,CELL,LITHIUM	SBCL0001303	1	PART
3	BUTTON ASSY,DIAL	ABGA0003601	1	ASSEMBLY
4	BUTTON,SIDE	MBJL0015401	1	PART
5	BUTTON,SIDE	MBJL0015501	1	PART
6	CAMERA	SVCY0004001	1	ASSEMBLY
7	CAP,EARPHONE JACK	MCCC0019301	1	PART
8	CAP,MOBILE SWITCH	MCCF0019901	1	PART
9	CAP,SCREW	MCCH0036401	2	PART
10	CAP,SCREW	MCCH0036501	1	PART
11	CAP,SCREW	MCCH0036701	1	PART
12	COVER,BATTERY	MCJA0013001	1	PART
13	COVER,FOLDER(LOWER)	MCJH0022101	1	PART
14	COVER,FOLDER(UPPER)	MCJJ0029001	1	PART
15	COVER,FRONT	MCJK0032701	1	PART
16	COVER,REAR	MCJN0029001	1	PART
17	DECO,CAMERA	MDAD0008101	1	PART
18	DECO,CAMERA	MDAD0008201	1	PART
19	DECO,FRONT(UPPER)	MDAE0025701	1	PART
20	DECO,RECEIVER	MDAH0009701	1	PART
21	DECO,WINDOW	MDAL0003801	1	PART
22	DEOM ASSY,METAL	ADCA0023701	1	ASSEMBLY
23	DEOM ASSY,METAL	ADCA0029401	1	ASSEMBLY
24	DEOM ASSY,METAL	ADCA0029501	1	ASSEMBLY
25	FILTER,SPEAKER	MFBC0011701	1	PART
26	GASKET,EMI	MGAB0008501	1	PART
27	GASKET,SHIELD FORM	MGAD0065501	1	PART
28	GASKET,SHIELD FORM	MGAD0069101	2	PART
29	GASKET,SHIELD FORM	MGAD0077701	1	PART
30	HINGE	MHFZ0003001	1	PART
31	HINGE,FOLDER	MHFD0003701	1	PART
32	INDICATOR,LED	MIAA0013301	1	PART
33	INSULATOR	MIDZ0049601	1	PART
34	LCD	SVLY0025301	1	PART
35	LENS,FLASH	MLCE0003301	1	PART
36	LOCKER,CARD READER	MLEE0000101	1	PART
37	MAGNET,SWITCH	MMAA0001601	1	PART
38	PAD,CAMERA	MPBT0010901	1	PART
39	PAD,FLEXIBLE PCB	MPBF0008301	2	PART
40	PAD,FLEXIBLE PCB	MPBF0008401	1	PART
41	PAD,LCD	MPBG0027001	1	PART
42	PAD,LCD(SUB)	MPBQ0018201	1	PART
43	PAD,MIKE	MPBH0008101	1	PART
44	PAD,MOTOR	MPBJ0019001	2	PART
45	PCB ASSY,MAIN,SMT	SAFF0052201	1	ASSEMBLY
46	PCB ASSY,FLEXIBLE	SACY0025802	1	ASSEMBLY
47	SCREW MACHINE	GMZZ0015101	9	PART
48	SPEAKER	SUSY0014101	1	PART
49	STOPPER	MSGY0008501	2	PART
50	STOPPER,HINGE	MSGB0008101	1	PART
51	TAPE	MTAZ0036001	2	PART
52	TAPE	MTAZ0043901	1	PART
53	TAPE	MTAZ0047101	1	PART
54	TAPE	MTAZ0059801	1	PART
55	TAPE,DECO	MTAA0060201	1	PART
56	TAPE,DECO	MTAA0060301	1	PART
57	TAPE,MOTOR	MTAF0004701	1	PART
58	TAPE,PROTECTION	MTAB0051901	1	PART
59	TAPE,PROTECTION	MTAB0059701	1	PART
60	TAPE,WINDOW	MTAD0029301	1	PART
61	TAPE,WINDOW	MTAD0029401	1	PART
62	TAPE,WINDOW(SUB)	MTAE0018801	1	PART
63	VIBRATOR,MOTOR	SJMY0002602	1	PART
64	WINDOW ASSY,LCD	AWAB0012701	1	PART
65	WINDOW,CAMERA	MWAE0005101	1	PART
66	WINDOW,LCD	MWAC0044801	1	PART

Note.

12.2 REPLACEMENT PARTS

<Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
1		GSM(FOLDER)	TGFF0054301		Titanium Black	
2	AAAY00	ADDITION	AAAY0069601		Titanium Black	
3	MCJA00	COVER,BATTERY	MCJA0013002	C3400, COVER BATTERY, Titanium Silver	Titanium Silver	12
2	APEY00	PHONE	APEY0188101	C3400 RUSTL, PHONE ASSEMBLY	Titanium Black	
3	ABGA00	BUTTON ASSY,DIAL	ABGA0003604	C3400 RUS, KEYPAD, MP3 & Download key, English, Titanium Silver	Titanium Silver	3
3	ACGG00	COVER ASSY,FOLDER	ACGG0051104	C3400 RUS, ASSY FOLDER, MP3 & LG logo, Titanium Black	Titanium Black	
4	ACGH00	COVER ASSY,FOLDER(LOWER)	ACGH0027703	C3400, ASSY FOLDER LOWER, Titanium Black	Titanium Black	
5	MCJH00	COVER,FOLDER(LOWER)	MCJH0022103	C3400, FOLDER LOWER, Titanium Black	Titanium Black	13
5	MDAH00	DECO,RECEIVER	MDAH0009701	C3300, DECO RECEIVER	Silver	20
5	MFBC00	FILTER,SPEAKER	MFBC0011701	C3300, FILTER SPEAKER	Black	25
5	MMAA00	MAGNET,SWITCH	MMAA0001601	7100 magnetic	Silver	37
5	MPBF00	PAD,FLEXIBLE PCB	MPBF0008301	C3300, PAD FPCB Noise	Black	39
5	MPBG00	PAD,LCD	MPBG0027001	C3300, PAD LCD(MAIN)	Black	41
5	MTAA00	TAPE,DECO	MTAA0060201	C3300, TAPE DECO(RECEIVER)		55
5	MTAD00	TAPE,WINDOW	MTAD0029301	C3300, TAPE WINDOW(MAIN)		60
5	MTAF00	TAPE,MOTOR	MTAF0004701	C3300, TAPE MOTOR		57
5	MTAZ00	TAPE	MTAZ0043901	GE200 TAPE,CAMERA(LOWER)	White	52
4	ACGJ00	COVER ASSY,FOLDER(UPPER)	ACGJ0039103	C3400, ASSY FOLDER UPPER, Titanium Silver	Titanium Silver	
5	MCJJ00	COVER,FOLDER(UPPER)	MCJJ0029002	C3400,FOLDER UPPER, Titanium Silver	Titanium Silver	14
6	MICA00	INSERT,FRONT	MICA0012901	GE200 EUASV	Gold	
5	MDAD00	DECO,CAMERA	MDAD0008101	C3300, DECO CAMERA (MIM)	Silver	17
5	MDAD01	DECO,CAMERA	MDAD0008201	C3300, DECO CAMERA(OUTLINE)	Black	18
5	MDAE00	DECO,FOLDER(UPPER)	MDAE0025702	C3400, DECO UPPER, Titanium Silver	Titanium Silver	19
5	MGAD00	GASKET,SHIELD FORM	MGAD0069101	C3300, GASKET LCD	Gold	28
5	MIDZ00	INSULATOR	MIDZ0049601	C3300, INSULATOR TAPE	Silver	33
5	MLCE00	LENS,FLASH	MLCE0003301	C3300, LENS FLASH		35
5	MPBF00	PAD,FLEXIBLE PCB	MPBF0008301	C3300, PAD FPCB Noise	Black	
5	MPBF01	PAD,FLEXIBLE PCB	MPBF0008401	C3300, PAD CONNECTOR(CAMERA)	Black	40
5	MPBJ00	PAD,MOTOR	MPBJ0019001	C3300, PAD MOTOR	Black	44
5	MPBQ00	PAD,LCD(SUB)	MPBQ0018201	C3300, PAD LCD(SUB)	Black	42
5	MPBT00	PAD,CAMERA	MPBT0010901	C3300, PAD CAMERA	Black	38
5	MTAA00	TAPE,DECO	MTAA0060301	C3300, TAPE DECO UPPER		56
5	MTAE00	TAPE,WINDOW(SUB)	MTAE0018801	C3300, TAPE WINDOW(SUB)		62
5	MTAZ00	TAPE	MTAZ0047101	C3300, TAPE LENS(CAMERA)		53
4	ACGK00	COVER ASSY,FRONT	ACGK0042903	C3400, ASSY MAIN FRONT, Titanium Black	Titanium Black	
5	MBJL00	BUTTON,SIDE	MBJL0015401	C3300, BUTTON SIDE(VOLUME)	Silver	4
5	MBJL01	BUTTON,SIDE	MBJL0015501	C3300, BUTTON SIDE(CAMERA)	Silver	5
5	MCJK00	COVER,FRONT	MCJK0032702	C3400, COVER FRONT, Titanium Black	Titanium Black	15
6	MICA00	INSERT,FRONT	MICA0012901	GE200 EUASV	Gold	
5	MGAB00	GASKET,EMI	MGAB0008501	C3300, GASKET DOME SWITCH	Gold	26
5	MHFZ00	HINGE	MHFZ0003001	C3300, DUMMY HINGE	Silver	30
5	MIAA00	INDICATOR,LED	MIAA0013301	C3300, INDECATOR	Milk	32
5	MPBH00	PAD,MIKE	MPBH0008101	3.8PIX0.7t	Black	43
5	MSGB00	STOPPER,HINGE	MSGB0008103	C3400, BUMPER(HINGE), Black	Black	50
5	MSGY00	STOPPER	MSGY0008502	C3400, BUMPER(FOLDER), Black	Black	49
5	MTAZ00	TAPE	MTAZ0059801	C3300, TAPE BUMPER		54
5	MTAZ01	TAPE	MTAZ0036001	C1300 CGRSV 27 X 9 X 0.05t	Blue	51
4	AWAB00	WINDOW ASSY,LCD	AWAB0012602	C3300, WINDOW(MAIN), LG logo	Silver	
5	MDAL00	DECO,WINDOW	MDAL0003802	C3300, DECO WINDOW(MAIN), LG logo	Silver	21
5	MTAD00	TAPE,WINDOW	MTAD0029401	C3300, TAPE WINDOW(ELECTROTYPE)		61
5	MWAC00	WINDOW,LCD	MWAC0044801	C3300, WINDOW(MAIN)		66
4	AWAB01	WINDOW ASSY,LCD	AWAB0012704	C3400, WINDOW(SUB), MP3, Black	Black	64
5	BFAA00	FILM,INMOLD	BFAA0023701	C3400, FILM INMOLD, MP3, Black	Black	
5	MWAF00	WINDOW,LCD(SUB)	MWAF0022801	C3300, WINDOW(SUB)		
4	GMZZ00	SCREW MACHINE	GMZZ0015101	1.4 mm,3.0 mm,MSWR3(FN) .N ,+ , - ,	Silver	
4	MCCH00	CAP,SCREW	MCCH0036403	C3400, CAP SCREW (Common), Black	Black	20
4	MCCH01	CAP,SCREW	MCCH0036503	C3400, CAP SCREW(L), Black	Black	21
4	MCCH02	CAP,SCREW	MCCH0036703	C3400, CAP SCREW(R), Black	Black	22

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
4	MHFD00	HINGE,FOLDER	MHFD0003701	PI5.8 5Kgf CAN TYPE/ KATO SPRING(HEAD R1.0)		31
4	MLAC00	LABEL,BARCODE	MLAC0003401	EZ LOOKS(user for mechanical)		
4	MPBJ00	PAD,MOTOR	MPBJ0019001	C3300 , PAD MOTOR	Black	
4	MTAB00	TAPE,PROTECTION	MTAB0051901	GE200 TAPE,PROTECTION(MAIN WINDOW)		60
4	MTAB01	TAPE,PROTECTION	MTAB0059701	GE200 TAPE,PROTECTION (FOLDER)		59
4	MWAE00	WINDOW,CAMERA	MWAE0005101	C3300 , LENS CAMERA		65
3	ACGM00	COVER ASSY,REAR	ACGM0042703	C3400, ASSY MAIN REAR, Titanium Silver	Titanium Silver	
4	MCCC00	CAP,EARPHONE JACK	MCCC0019301	C3300 , CAP EARPHONE JACK, Silver	Silver	7
4	MCJN00	COVER,REAR	MCJN0029002	C3400, REAR, Titanium Silver	Titanium Silver	16
4	MGAD00	GASKET,SHIELD FORM	MGAD0065501	GE200(REAR)	Gold	27
4	MLEE00	LOCKER,CARD READER	MLEE0000101			36
3	GMZZ00	SCREW MACHINE	GMZZ0015101	1.4 mm,3.0 mm,MSWR3(FN) ,N ,+ , - ,	Silver	47
3	MCCF00	CAP,MOBILE SWITCH	MCCF0019901	C3300, CAP MOBILE SWITCH, Silver	Silver	8
3	MLAA00	LABEL,APPROVAL	MLAA0030401	C3400 RUSSIA, APPROVAL LABEL (14x9)	White	
3	MLAK00	LABEL,MODEL	MLAK0006301	LG (30.5x21.5 4-1R)	Pearl White	
5	MLAB00	LABEL,A/S	MLAB0000601	HUMIDITY STICKER		
5	MLAC00	LABEL,BARCODE	MLAC0003301	EZ LOOKS(use for PCB ASSY MAIN(hardware))		

12. EXPLODED VIEW & REPLACEMENT PART LIST

<Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
4	SACY00	PCB ASSY,FLEXIBLE	SACY0025802			46
5	SACB00	PCB ASSY,FLEXIBLE,INSERT	SACB0018701			
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0023802			
6	SACC00	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0011801			
7	ENBY00	CONNECTOR,BOARD TO BOARD	ENBY0013007	60 PIN,0.4 mm,STRAIGHT ,AU ,STACKING HEIGHT 1.5 / HEADER FOR LCM FPCB		
7	ENBY01	CONNECTOR,BOARD TO BOARD	ENBY0019501	20 PIN,.4 mm,ETC , ,H=1.5, Socket		
6	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0017701			
7	EDLM00	DIODE,LED,MODULE	EDLM0005501	R,G,B ,3 LED,3.5*2.8*1.8 ,R/TP ,Flash LED		
7	ENBY00	CONNECTOR,BOARD TO BOARD	ENBY0014501	40 PIN,0.4 mm,ETC , ,		
6	SPCY00	PCB,FLEXIBLE	SPCY0043801	POLYI ,0.5 mm,MULTI4 ,C3400 FPCB		
4	SBCL00	BATTERY,CELL,LITHIUM	SBCL0001303	2 V,1 mAh,COIN ,SOLDER TYPE BACKUP BATTERY		2
4	SJMY00	VIBRATOR,MOTOR	SJMY0002602	3.0 V,80 mA,12*3.4 ,		63
4	SUSY00	SPEAKER	SUSY0014101	ASSY ,8 ohm,92 dB,16 mm,4.0T, 0.7W		48
4	SVCY00	CAMERA	SVCY0004001			6
4	SVLY00	LCD	SVLY0025301			34
3	SAFY00	PCB ASSY,MAIN	SAFY0124601		Titanium Black	
4	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0039504			
5	ADCA00	DOME ASSY,METAL	ADCA0023701	GE200 EUASV	Silver	
5	ADCA01	DOME ASSY,METAL	ADCA0029401	GE200 DOME ASSY, VOLUME	Silver	23
5	ADCA02	DOME ASSY,METAL	ADCA0029501	GE200 DOME ASSY, FUNCTION(CAMERA)	Silver	24
5	MGAD00	GASKET,SHIELD FORM	MGAD0077701	GE200 SHIELD,FOAM(INTENNA)	Gold	29
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0052201			45
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0047801			
6	C100	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C101	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C102	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C103	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C104	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C105	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C107	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C108	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0000393	22 uF,6.3V ,M ,X5R ,HD ,2012 ,R/TP		
6	C110	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C111	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C113	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C116	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0005801	2.2 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C118	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C119	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C120	CAP,CERAMIC,CHIP	ECCH0000165	68 nF,6.3V,K,X5R,HD,1005,R/TP		
6	C121	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C122	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C123	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C124	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C126	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C129	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C130	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C131	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C132	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C133	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C134	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C135	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C136	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C137	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C138	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C139	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C140	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C141	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C143	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C150	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C151	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C152	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C155	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C160	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C170	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C200	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C202	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C203	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C206	CAP,TANTAL,CHIP,MAKER	ECTZ0003602	22 uF,6.3V ,M ,STD ,2012 ,R/TP		
6	C207	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C208	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C209	CAP,TANTAL,CHIP,MAKER	ECTZ0003101	33 uF,10V ,M ,STD ,ETC ,R/TP		
6	C210	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C211	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C212	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C213	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C214	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C215	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C216	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C217	CAP,TANTAL,CHIP,MAKER	ECTZ0003101	33 uF,10V ,M ,STD ,ETC ,R/TP		
6	C218	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C219	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C220	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C277	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C289	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C304	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C305	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C306	CAP,CERAMIC,CHIP	ECCH0000104	3 pF,50V,C,NP0,TC,1005,R/TP		
6	C307	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C308	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C309	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C325	CAP,CERAMIC,CHIP	ECCH0004902	220 nF,10V ,Z ,Y5V ,TC ,1005 ,R/TP		
6	C326	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C327	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C328	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C329	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C330	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C331	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C332	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C333	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C334	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C340	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C341	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C400	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L ,ESR ,1608 ,R/TP		
6	C401	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C402	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C403	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C404	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C406	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C407	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C410	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C413	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C414	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C415	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C416	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C417	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C420	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C421	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C422	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C500	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C501	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C502	CAP,CERAMIC,CHIP	ECCH0000186	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C503	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C504	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C505	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C506	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C507	CAP,CERAMIC,CHIP	ECCH0000393	22 uF,6.3V ,M ,X5R ,HD ,2012 ,R/TP		
6	C508	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C509	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C510	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C512	CAP,CERAMIC,CHIP	ECCH0000101	.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C513	CAP,CERAMIC,CHIP	ECCH0000102	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C514	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C516	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C518	CAP,CERAMIC,CHIP	ECCH0000102	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C519	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C520	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C521	CAP,CERAMIC,CHIP	ECCH0000102	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C522	CAP,CERAMIC,CHIP	ECCH0000102	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C525	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C526	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C527	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C528	CAP,CERAMIC,CHIP	ECCH0000128	100 pF,50V,J,NP0,TC,1005,R/TP		
6	C529	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C530	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C531	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C532	CAP,CERAMIC,CHIP	ECCH0000128	100 pF,50V,J,NP0,TC,1005,R/TP		
6	C535	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C536	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C537	CAP,CERAMIC,CHIP	ECCH0000171	3.3 pF,16V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C539	CAP,CERAMIC,CHIP	ECCH0005801	2.2 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C540	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C541	CAP,CERAMIC,CHIP	ECCH0000186	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C581	CAP,CERAMIC,CHIP	ECCH0000111	12 pF,50V,J,NP0,TC,1005,R/TP		
6	C600	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C601	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C602	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C603	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C604	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C700	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C701	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C702	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C703	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C704	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C705	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C706	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C707	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C710	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C711	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C712	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C713	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C714	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C715	CAP,CERAMIC,CHIP	ECCH0004902	220 nF,10V ,Z ,Y5V ,TC ,1005 ,R/TP		
6	C717	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C718	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C730	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C740	CAP,CERAMIC,CHIP	ECCH0000130	150 pF,50V ,J ,SL ,TC ,1005 ,R/TP		
6	C741	CAP,CERAMIC,CHIP	ECCH0000130	150 pF,50V ,J ,SL ,TC ,1005 ,R/TP		
6	C760	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C761	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	CN300	CONNECTOR,I/O	ENRY0000801	24 PIN,0.5 mm,ETC ,Au ,BAT ZERO		
6	CN301	CONNECTOR,ETC	ENZY0016201	3 PIN,3.0 mm,ETC , ,H=7.5		
6	CN601	CONNECTOR,BOARD TO BOARD	ENBY0013008	60 PIN,0.4 mm,STRAIGHT ,AU ,STACKING HEIGHT 1.5 / SOCKET FOR LCM FPCB		
6	D101	DIODE,SWITCHING	EDSY0005701	EMT3 ,80 V,4 A,R/TP ,		
6	D102	DIODE,SWITCHING	EDSY0012101	US-FLAT ,30 V,1 A,R/TP ,2.5*1.25*0.6(t)		
6	FB400	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FB403	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FL401	FILTER,SAW	SFSY0021301	942.5 MHz,2.0*1.4*0.68 ,SMD ,		
6	FL402	FILTER,SAW	SFSY0021302	1842.5 MHz,2.0*1.4*0.68 ,SMD ,		
6	FL500	FILTER,SEPERATOR	SFAY0003702	900 ,1800 ,1.3 dB,1.5 dB,30 dB,25 dB,4532 ,Antenna switch		
6	FL600	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL601	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL602	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL603	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL604	FILTER,EMI/POWER	SFEY0007103	SMD ,18 V , ,SMD ,4ch. R-Varistor Array(50Ohm,15pF)		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	FL605	FILTER,EMI/POWER	SFEY0007103	SMD ,18 V ,SMD ,4ch. R-Varistor Array(50Ohm,15pF)		
6	FL606	FILTER,EMI/POWER	SFEY0007103	SMD ,18 V ,SMD ,4ch. R-Varistor Array(50Ohm,15pF)		
6	FL607	FILTER,EMI/POWER	SFEY0007103	SMD ,18 V ,SMD ,4ch. R-Varistor Array(50Ohm,15pF)		
6	FL608	FILTER,EMI/POWER	SFEY0007103	SMD ,18 V ,SMD ,4ch. R-Varistor Array(50Ohm,15pF)		
6	J200	CONN,JACK/PLUG,EARPHONE	ENJE0003102	4 ,4 PIN,BOSS-2		
6	J300	CONN,SOCKET	ENSY0001608	6 PIN,ETC ,5D ,2.54 mm,1.8T		
6	L500	INDUCTOR,CHIP	ELCH0004711	22 nH,J ,1005 ,R/TP ,		
6	L501	INDUCTOR,CHIP	ELCH0002715	27 nH,G ,1608 ,R/TP ,coil inductor		
6	L503	INDUCTOR,CHIP	ELCH0002717	6.8 nH,J ,1608 ,R/TP ,coil inductor		
6	L507	INDUCTOR,CHIP	ELCH0005006	33 nH,J ,1005 ,R/TP ,		
6	L508	INDUCTOR,CHIP	ELCH0005006	33 nH,J ,1005 ,R/TP ,		
6	L509	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	Q100	TR,FET,P-CHANNEL	EQFP0004201	2.9*1.9*0.8(t) ,0.7 W,20 V,-6.0 A,R/TP ,NDC652P upgrade(substitution) item		
6	Q201	TR,BJT,ARRAY	EQBA0000406	SC-70 ,0.2 W,R/TP ,CDMA,Common use		
6	Q300	TR,BJT,ARRAY	EQBA0002701	EMT6 ,150 mW,R/TP ,NPN, PNP, 150 mA		
6	Q301	TR,BJT,NPN	EQBN0004801	SMT6 ,0.2 W,R/TP ,		
6	Q400	TR,FET,P-CHANNEL	EQFP0004501	SOT-323 ,0.29 W,1.8 V,0.86 A,R/TP ,P-Chanel MOSFET		
6	R101	RES,CHIP	ERHY0000267	24K ohm,1/16W,J,1005,R/TP		
6	R102	RES,CHIP	ERHY0000291	330K ohm,1/16W,J,1005,R/TP		
6	R103	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R104	RES,CHIP	ERHY0000225	200 ohm,1/16W,J,1005,R/TP		
6	R106	RES,CHIP	ERHY0001102	0.2 ohm,1/4W ,F ,2012 ,R/TP		
6	R108	RES,CHIP,MAKER	ERHZ0000326	330 ohm,1/16W ,F ,1005 ,R/TP		
6	R109	RES,CHIP	ERHY0000512	10M ohm,1/16W,J,1608,R/TP		
6	R110	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R111	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP		
6	R112	RES,CHIP	ERHY0000152	82K ohm,1/16W,F,1005,R/TP		
6	R113	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP		
6	R116	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R117	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R122	RES,CHIP	ERHY0010201	1.2 Mohm,1/16W ,F ,1005 ,R/TP		
6	R126	RES,CHIP	ERHY0000106	100 ohm,1/16W,F,1005,R/TP		
6	R130	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R178	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R188	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R200	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R201	RES,CHIP	ERHY0000296	1M ohm,1/16W,J,1005,R/TP		
6	R202	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R203	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R204	RES,CHIP	ERHY0000244	1.5K ohm,1/16W,J,1005,R/TP		
6	R205	RES,CHIP	ERHY0000247	2.2K ohm,1/16W,J,1005,R/TP		
6	R206	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R208	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R209	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R210	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R211	RES,CHIP	ERHY0000262	12K ohm,1/16W,J,1005,R/TP		
6	R212	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R213	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP		
6	R214	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R215	RES,CHIP	ERHY0000247	2.2K ohm,1/16W,J,1005,R/TP		
6	R216	RES,CHIP	ERHY0000296	1M ohm,1/16W,J,1005,R/TP		
6	R217	RES,CHIP,MAKER	ERHZ0000757	15 ohm,1/10W ,J ,1608 ,R/TP		
6	R221	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R222	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R223	RES,CHIP	ERHY0000258	7.5K ohm,1/16W,J,1005,R/TP		
6	R224	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R225	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R228	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R230	RES,CHIP	ERHY0000291	330K ohm,1/16W,J,1005,R/TP		
6	R300	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R306	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R307	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R308	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R309	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R310	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R311	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R312	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R313	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R315	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R316	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R317	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R320	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R321	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R322	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R323	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R326	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R328	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R329	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP		
6	R330	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R331	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R346	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R348	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R349	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R350	RES,CHIP	ERHY0000207	20 ohm,1/16W,J,1005,R/TP		
6	R351	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R352	RES,CHIP	ERHY0000226	220 ohm,1/16W,J,1005,R/TP		
6	R353	RES,CHIP	ERHY0000244	1.5K ohm,1/16W,J,1005,R/TP		
6	R354	RES,CHIP	ERHY0000258	7.5K ohm,1/16W,J,1005,R/TP		
6	R355	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R356	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R357	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R358	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R360	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R361	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R362	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R363	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R364	RES,CHIP	ERHY0000262	12K ohm,1/16W,J,1005,R/TP		
6	R367	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R369	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R372	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R373	RES,CHIP	ERHY0000262	12K ohm,1/16W,J,1005,R/TP		
6	R400	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R402	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R407	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R409	RES,CHIP	ERHY0000208	22 ohm,1/16W,J,1005,R/TP		
6	R410	RES,CHIP	ERHY0000244	1.5K ohm,1/16W,J,1005,R/TP		
6	R412	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R421	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R422	RES,CHIP	ERHY0000258	7.5K ohm,1/16W,J,1005,R/TP		
6	R501	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R502	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R503	RES,CHIP	ERHY0006603	36 ohm,1/16W,J,1005,R/TP		
6	R504	RES,CHIP	ERHY0000223	150 ohm,1/16W,J,1005,R/TP		
6	R505	RES,CHIP	ERHY0000223	150 ohm,1/16W,J,1005,R/TP		
6	R506	RES,CHIP	ERHY0000210	30 ohm,1/16W,J,1005,R/TP		
6	R507	RES,CHIP	ERHY0000224	180 ohm,1/16W,J,1005,R/TP		
6	R508	RES,CHIP	ERHY0000224	180 ohm,1/16W,J,1005,R/TP		
6	R509	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R510	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R515	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R601	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R602	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R603	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R604	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R605	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R611	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R633	RES,CHIP	ERHY0000233	470 ohm,1/16W,J,1005,R/TP		
6	R634	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R635	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R640	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R702	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R703	RES,CHIP	ERHY0008603	8.2 Kohm,1/16W,F,1005,R/TP		
6	R704	RES,CHIP	ERHY0000285	180K ohm,1/16W,J,1005,R/TP		
6	R705	RES,CHIP	ERHY0000285	180K ohm,1/16W,J,1005,R/TP		
6	R707	RES,CHIP	ERHY0008603	8.2 Kohm,1/16W,F,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R710	RES,CHIP	ERHY0000275	56K ohm,1/16W,J,1005,R/TP		
6	SW500	CONN,RF SWITCH	ENWY0002201	ANGLE ,SMD ,0.8 dB,		
6	U101	IC	EUSY0251701	BGA ,204 PIN,R/TP ,Digital BaseBand Hermes+USB		
6	U200	IC	EUSY0077701	SC70-5 ,5 PIN,R/TP ,1.8V Low Voltage Comparator with Rail-to-Rail Input		
6	U201	IC	EUSY0204801	SC82-AB (SC70-4) ,4 PIN,R/TP ,80mA CMOS LOW IQ LDO VOLTAGE REGULATOR / 2.5V		
6	U202	IC	EUSY0119002	4X3 UCSP / CODE : B12-4 ,10 PIN,R/TP ,DUAL SPDT ANALOG SWITCHES		
6	U301	DIODE,TVS	EDTY0006501	SC70-6L ,5.25 V,100 W,R/TP ,		
6	U302	IC	EUSY0185501	FBGA ,88 PIN,R/TP ,88BALL, 128M/128M Flash+64Mb PSRAM, 3V I/O, 1.8V core		
6	U401	IC	EUSY0232601			
6	U402	IC	EUSY0245401	DFN ,16 PIN,R/TP ,Main 3 LEDs(60mA) + Flash (300mA) Charge pump		
6	U404	IC	EUSY0184802	MLF ,6 PIN,R/TP ,150mA / 2.85V High PSRR u-Cap LDO Regulator		
6	U501	PAM	SMFY0007201	35 dBm,53 %,0.8 A,-50 dBc,50 dB,6.0*8.0*1.2 ,SMD ,QUAD		
6	U502	IC	EUSY0161301	8x8 LGA ,28 PIN,R/TP ,		
6	U503	IC	EUSY0118602	SOT23 ,5 PIN,R/TP ,2.85V/150mA Low Noise uCap LDO Regulator		
6	U701	IC	EUSY0154407	MLF ,10 PIN,R/TP ,Dual(1.5V/150mA,2.8V/300mA) LDO Regulator		
6	U702	IC	EUSY0221901	BGA ,85 PIN,R/TP ,Midi 64poly & AAC & MP3 Decoder		
6	U703	IC	EUSY0250401	LQ ,8 PIN,R/TP ,1.1W Audio amp w/ shutdown selection		
6	U705	IC	EUSY0119002	4X3 UCSP / CODE : B12-4 ,10 PIN,R/TP ,DUAL SPDT ANALOG SWITCHES		
6	VA200	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA201	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA204	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA305	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA306	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
6	VA307	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA309	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	X101	X-TAL	EXXY0015601	.032768 MHz,20 PPM,7 pF,65000 ohm,SMD ,6.9*1.4*1.3 ,		
6	X500	VCTCXO	EXSK0005002	26 MHz,1 PPM,10 pF,SMD ,3.2*2.5*1.1 ,		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0046601			
6	C310	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C311	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C313	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C315	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C316	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C317	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C318	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C319	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C320	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C321	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C322	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C323	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C411	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP		
6	C412	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C488	CAP,CERAMIC,CHIP	ECCH0000137	330 pF,50V ,K ,X7R ,HD ,1005 ,R/TP		
6	LD200	DIODE,LED,CHIP	EDLH0007901	RED ,1608 ,R/TP ,Indicator,0.4T Red LED		
6	LD300	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD303	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD304	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD305	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD306	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD307	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD308	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD309	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD310	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD311	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD312	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	LD313	DIODE,LED,CHIP	EDLH0004502	BLUE ,1608 ,R/TP ,0.35T		
6	MIC200	MICROPHONE	SUMY0009201	FPCB ,44 dB,4.0*1.3 ,SMD TYPE		
6	Q200	TR,BJT,NPN	EQBN0007101	EMT3 ,0.15 W,R/TP ,LOW FREQUENCY		
6	R218	RES,CHIP	ERHY0000231	390 ohm,1/16W,J,1005,R/TP		
6	R226	RES,CHIP	ERHY0000207	20 ohm,1/16W,J,1005,R/TP		
6	R301	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R302	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R303	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R304	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R305	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R332	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R335	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R336	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R337	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R338	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R339	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R340	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R341	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R342	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R343	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R344	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R345	RES,CHIP	ERHY0000217	75 ohm,1/16W,J,1005,R/TP		
6	R380	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R381	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R418	RES,CHIP	ERHY0000274	51K ohm,1/16W,J,1005,R/TP		
6	U403	IC	EUSY0129501	SC-74A ,3 PIN,R/TP ,HALL-EFFECT SWITCH		
6	VA202	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN, ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA203	RES,VARIABLE,ETC	ERVZ0000101	ohm, PIN, ,SMD ,R/TP ,1005 SIZE CHIP VARISTOR		
6	VA300	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
6	VA301	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
6	VA302	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
6	VA303	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
6	VA304	VARISTOR	SEVY0000702	14 V,10% ,SMD ,		
5	SPFY	PCB,MAIN	SPFY0086201	FR-4 ,1.0 mm,BUILD-UP 8 ,		
3	SNGF00	ANTENNA,GSM,FIXED	SNGF0006301	3.0 ,-2.0 dBd ,EGSM+DCS, Intenna		1

12. EXPLODED VIEW & REPLACEMENT PART LIST

12.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
3	MHBY00	HANDSTRAP	MHBY0001101	Neck Strap 380mm	Gray	
3	SBPL00	BATTERY PACK,LI-ION	SBPL0076308	3.7 V,1000 mAh,1 CELL,PRISMATIC ,GC200(K-PJT) BATTERY, 523450 INNERPACK	Silver	
3	SGDY00	DATA CABLE	SGDY0005601	DK-40G ,K8000 24PIN I/O + USB A TYPE		
3	SGEY00	EAR PHONE/EAR MIKE SET	SGEY0003501			
3	SRCY00	CDROM	SRCY0001348	S/W ,NONE ,C3400 CD ,650 MB,		
3	SSAD00	ADAPTOR,AC-DC	SSAD0007828	100-240V ,60 Hz,5.2 V,800 mA,CE,CB,GOST ,EU PLUG(24P),STD		
3	WSYY00	SOFTWARE	WSYY0209601			